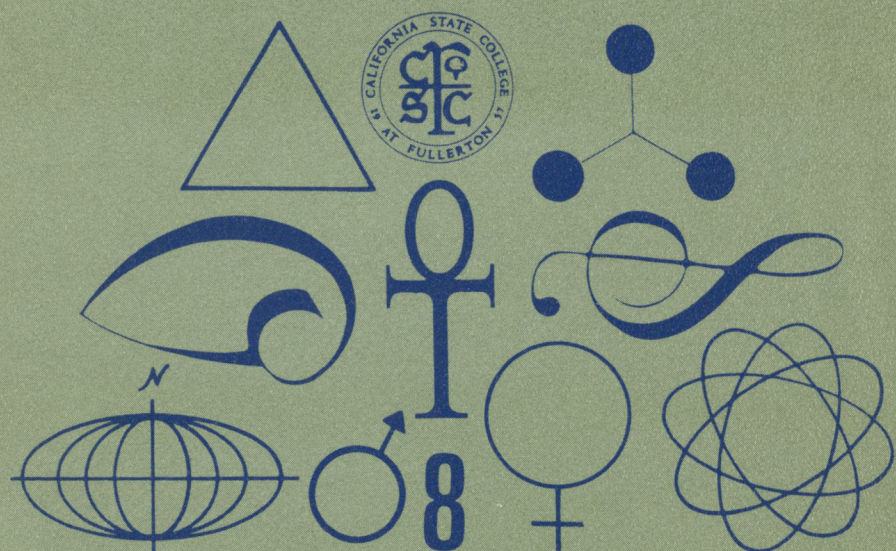
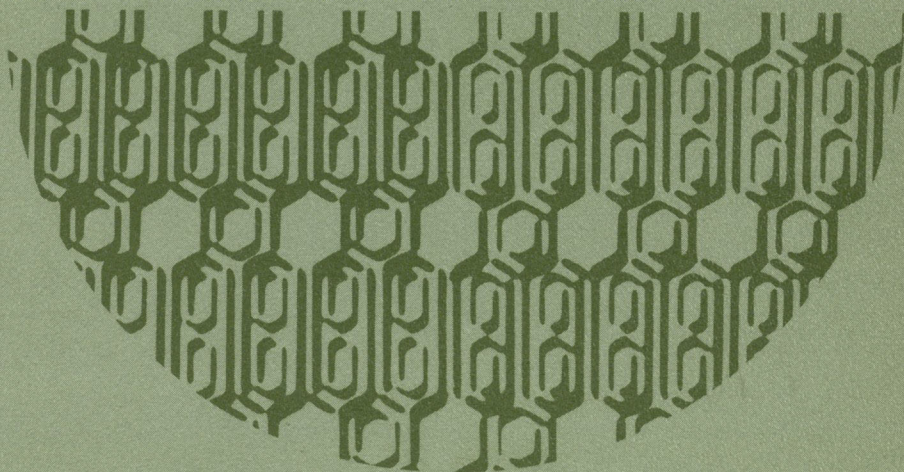


67-68
CATALOG



CALIFORNIA STATE COLLEGE AT FULLERTON

800 NORTH STATE COLLEGE BOULEVARD, FULLERTON, CALIFORNIA 92631



GENERAL CATALOG

and

ANNOUNCEMENT OF COURSES

1967-1968



CALIFORNIA STATE COLLEGE

AT FULLERTON

(Formerly Orange State College)

800 North State College Boulevard, Fullerton, California
(714) 871-3300

92631

All material herein is subject to change without prior notice

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1967

JANUARY							JULY						
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1968

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SUMMER SESSION 1967—First Session

May 19, Friday	Application deadline for master's degree candidates for graduation, September 1967
June 9, Friday	Last day to register early
June 19, Monday	First summer session begins—registration and classes
July 4, Tuesday	Independence Day (holiday—all offices closed)
July 28, Friday	First summer session ends

SUMMER SESSION 1967—Second Session

July 31, Monday	Second summer session begins—registration and classes
September 4, Monday	Labor Day (holiday—all offices closed)
September 8, Friday	Second summer session ends

FALL SEMESTER 1967**February 1 to July 1, 1967**

Period for filing applications for admission to the fall semester 1967 for all new students and former students not in attendance during the spring semester 1967. Applicants are urged to file early in the period in view of probable enrollment limitations.

September 11, Monday	Faculty and student orientation (semester begins)
September 12-14, Tuesday-Thursday	Student orientation, advisement and registration
September 14, Thursday	Last day to register without late registration fee
September 18, Monday	Classes begin
October 20, Friday	Application deadline for baccalaureate degree candidates for graduation, June 1968 and September 1968
November 23, 24 Thursday, Friday	Thanksgiving recess (all offices closed both days)
December 1, Friday	Application deadline for master's degree candidates for graduation, January 1968
December 1, Friday	Applications for admission for spring semester 1968 due in admissions office
December 18, Monday	Christmas recess begins
January 2, Tuesday	Classes resume
January 12, Friday	Last day of classes
January 17, Wednesday	Semester examinations begin
January 24, Wednesday	Semester examinations end
January 26, Friday	Semester ends

September 15 to December 1, 1967

Period for filing applications for admission to the spring semester 1968 for all new students and former students not in attendance during the fall semester 1967. Applicants are urged to file early in the period in view of probable enrollment limitations.

January 29-31,	
Monday-Wednesday.....	Registration for all classes (semester begins)
January 31, Wednesday.....	Last day to register without late registration fee
February 5, Monday.....	Classes begin
February 12, Monday.....	Lincoln's Birthday (holiday—all offices closed)
February 22, Thursday.....	Washington's Birthday (holiday—all offices closed)
March 8, Friday.....	Application deadline for baccalaureate degree candidates for graduation January 1969
April 8, Monday.....	Spring recess begins
April 11, Thursday.....	Application deadline for master's degree candidates for graduation, June 1968
April 15, Monday.....	Classes resume
April 27, Saturday.....	Day of the Titan
May 17, Friday.....	Application deadline for master's degree candidates for graduation, September 1968
May 24, Friday.....	Last day of classes
May 29, Wednesday.....	Semester examinations begin
May 30, Thursday.....	Memorial Day (holiday—all offices closed)
June 5, Wednesday.....	Semester examinations end
June 7, Friday.....	Commencement (semester ends)

SUMMER SESSION 1968—First Session

May 17, Friday.....	Application deadline for master's degree candidates for graduation, September 1968
June 7, Friday.....	Last day to register early
June 17, Monday.....	First summer sessions begins—registration and classes
July 4, Thursday.....	Independence Day (holiday—all offices closed)
July 26, Friday.....	First summer session ends

SUMMER SESSION 1968—Second Session

July 29, Monday.....	Second summer session begins—registration and classes
September 2, Monday.....	Labor Day (holiday—all offices closed)
September 6, Friday.....	Second summer session ends

ORGANIZATION AND ADMINISTRATION

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OFFICE OF THE CHANCELLOR
THE CALIFORNIA STATE COLLEGES
ADVISORY BOARD AND COUNCILS

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5670 Wilshire Boulevard, Los Angeles 90036

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Raymond A. Rydell	Executive Vice Chancellor
Harry E. Brakebill	Vice Chancellor, Business Affairs
C. Mansel Keene	Assistant Chancellor, Faculty and Staff Affairs

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Dominguez Hills 90247
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213 532-4300

California State College at Fullerton

800 North State College Boulevard
Fullerton 92631
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714 871-3300

California State College at Hayward

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Hayward 94542
Fred F. Harclerod, President
415 538-8000

California State College at Long Beach

6101 East Seventh Street
Long Beach 90804
Carl W. McIntosh, President
213 433-0951

California State College at Los Angeles

5151 State College Drive
Los Angeles 90032
John A. Greenlee, President
213 224-2011

California State College at San Bernardino

5500 State College Parkway
San Bernardino 92407
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714 887-6311

California State Polytechnic College

Kellogg-Voorhis Campus
Pomona 91766
Robert C. Kramer, President
213 964-6424

California State Polytechnic College, San Luis Obispo

San Luis Obispo 93401
Presidency vacant
805 546-0111

Chico State College

1st and Normal Streets
Chico 95926
Robert E. Hill, President
916 343-4411

Fresno State College

Shaw and Cedar Avenues
Fresno 93726
Frederic W. Ness, President
209 222-5161

Humboldt State College

Arcata 95521
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Sacramento 95819
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Turlock 95380
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THE CALIFORNIA STATE COLLEGES

The California State Colleges are a unique development of the democratic concept of tax-supported public higher education for all qualified students.

Spanning the state from Humboldt County in the north to San Diego in the south, the 18 campuses of the California State Colleges (with another campus soon to be constructed) represent the largest system of public higher education in the western hemisphere and one of the largest in the world. Current enrollment exceeds 170,000 full- and part-time students. The faculty and administrative staff numbers more than 9,000.

The individual colleges, each with a geographic, curricular and academic character of its own, offer solid basic programs in the liberal arts. Beyond this, each college is noted for its individuality in academic emphasis which makes for a diversified system. Course offerings leading to the bachelor's and master's degree are designed to satisfy existing student interests and to serve the technical and professional manpower requirements of the state.

The California State Colleges are dedicated to rigorous academic standards. Constant striving for academic excellence is at the heart of the system. The primary responsibility of each faculty within the system is the instructional process on the teacher-student level, with appropriate recognition of the necessary and constructive role of research in any institution of higher education.

Responsibility for the California State Colleges is vested in the board of trustees, which is appointed by the Governor, and the board's administrative arm, the chancellor. The trustees and the chancellor set broad policy for the colleges while delegating considerable independent responsibility for implementation at the college level. A statewide Academic Senate, made up of representatives elected by the faculty at each college, acts as a consultative body to the chancellor on academic affairs.

Although the oldest of the colleges, San Jose State College, dates back a century, the California state college system under an independent board of trustees was created by the Donahoe Act of 1960. Formerly, the colleges were under the jurisdiction of the State Board of Education.

Today, the California State Colleges are in a particularly dynamic period of their development. Before World War II, there were seven state colleges with a peak total enrollment of some 13,000. Since 1947, 11 new colleges have been established and a site has been selected for a new college in Kern County. Enrollment in the system is expected to reach 225,000 by 1970.

CALIFORNIA STATE COLLEGE AT FULLERTON

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Commerce
Anaheim

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Science Advisory Council

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Group Vice President
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El Monte

Merl J. Carson, M.D.
Medical Director
Children's Hospital of
Orange County
Orange

Earl A. Coddington
Professor of Mathematics
University of California
Los Angeles

Robert P. Dilworth
Professor of Mathematics
California Institute of Technology
Pasadena

Joseph Kaplan
Professor of Physics
University of California
Los Angeles

Ernst H. Krause
Vice President
Aerospace Corporation
Newport Beach

H. W. Magoun
Dean of Graduate Division
University of California
Los Angeles

Thane H. McCulloh
Professor of Geology
California Institute of Technology
Pasadena

Andreas Rechnitzer
Project Engineer
Autonetics, Division of North
American Aviation, Inc.
Anaheim

N. Allen Riley
Laboratory Director
Chevron Research Company
La Habra

Howard Steinberg
Vice President and Director of
Research
U.S. Borax Research Corporation
Anaheim

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Garden Grove Unified School
District
Garden Grove
- Mr. A. Stanley Corey
Assistant Superintendent for
Instruction
Buena Park School District
Buena Park
- Mr. Douglas C. Dyer
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Santa Ana Senior High School
Santa Ana
- Mrs. Cymbre P. Ferguson
Curriculum Consultant
Centralia School District
Buena Park
- Mr. Clarence Johnson
Fountain Valley School District
Huntington Beach
Westminster
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Garden Grove
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Fullerton
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La Habra
- Mr. Barron G. Knechtel
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Orange Coast College
Costa Mesa
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District
Garden Grove
- Mrs. Mildred D. Mohney
Association of Cypress Teachers
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- Mr. William E. Montonna
Principal, Villa Park High School
Villa Park
- Mrs. Edward W. Nelson
President, Fourth District PTA
Garden Grove
- Dr. Edwin N. Norvell
Dean of Liberal Arts
Santa Ana Junior College
Santa Ana
- Dr. Robert Peterson
County Superintendent of Schools
Santa Ana
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Dean of Instruction
Sonora High School
La Habra
- Mrs. Marie Smith
Arbolita School
La Habra City School District
La Habra
- Dr. William Stocks
Assistant Superintendent, Instruction
and Personnel
San Joaquin School District
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English Department,
Katella High School
Anaheim

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- | | |
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| North American Aviation | Institute |
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| L. W. Bunning | Theresa A. Philler |
| Manager, Publications | Technical Writer |
| Collins Radio Company | Allegheny Ludlum Steel Corporation |
| Newport Beach | Los Angeles |
| James J. Caron | Frank A. Quackenbush |
| Technical Communications | Head, Graphic Communications |
| Management | Section |
| Space Division | Hughes Aircraft |
| North American Aviation | Fullerton |
| Downey | HyDee Small |
| Frank Cueto | Technical Data Consultant and |
| Quality Control Engineer | Specification Writer-Editor |
| Space and Information Systems | Building Specifiers Associates |
| Division | San Gabriel |
| North American Aviation | John M. Stormes |
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| Mildred Hannum | Space and Information Systems |
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| Walter J. Lower | Downey |
| Training Representative | |
| Space and Information Systems | |
| Division | |
| North American Aviation | |
| Downey | |

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Macco Realty Company
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Fullerton Savings and Loan
Association
Fullerton

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Santa Ana

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Coldwell-Banker and Company
Newport Beach

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Partner, McLean and Schultz
Consulting Engineers
Fullerton

Don N. Schneider
Owner
D. N. Schneider Construction
Company
Placentia

Andrew Trevedi
Economist
Economic Research Associates
Los Angeles

Ray Watson
Vice President
The Irvine Company
Irvine

Gin Wong
President
W. L. Pereira and Associates
Los Angeles

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Yorba Linda
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La Habra
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THE COLLEGE

ADMINISTRATION
OBJECTIVES AND HISTORY
SPECIAL PROGRAMS AND SERVICES
RESEARCH CENTERS AND CLINICS
STUDENT PERSONNEL SERVICES

ADMINISTRATION

COLLEGE ADMINISTRATION

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Administrative Assistant	Lois S. Herron
Executive Assistant	W. Werner Prange
Director of Development	Edward W. Smith
Executive Dean	Stuart F. McComb
Building Coordinator	Milton C. Blanchard
Vice President, Academic Affairs	Bernard L. Hyink
Administrative Assistant	Doris B. Kostal
Dean, School of Letters, Arts and Science	Miles D. McCarthy
Dean, School of Business Administration and Economics	Donald S. Tull
Dean, School of Education	Kenneth R. Doane
Dean, School of Engineering	Robert G. Valpey
Dean of Educational Services and Summer Session	Gerhard E. Ehmann
Coordinator of Graduate Studies	Sherwood P. Cummings
College Librarian	Ernest W. Toy, Jr.
Director of Audio Visual and Television Services	Raymond E. Denno
Director of Extension and Coordinator of Evening Classes	R. Harold Van Cleave
Dean of Students	Ernest A. Becker
Financial Aids Officer	Thomas D. Morris
Associate Dean of Students and Director of Admissions and Records	Ralph Bigelow
Admissions Officer	John Campbell
Registrar	Mildred Scott
Associate Dean of Students and Director of Counseling Center	Ronald M. Bristow
Counselor	Arthur W. Lynn
Counselor	Charles W. Buck
Counselor and Test Officer	Jack Russell
Foreign Student Adviser	Louise Lee
Psychometrist and Research Coordinator	Howard Morton
Associate Dean of Students and Director of Relations with Schools	Emmett T. Long
Associate Dean of Students and Director of Student Activities	T. Roger Nudd
Activities Adviser	Betty Bradley
Director of Housing	Dudley A. Stier
Director of Placement Services	Max W. Burke
Placement Supervisor	Bradley Weyman
Medical Director	Helen L. Morton, M.D.
Business Manager	J. E. Lyons
Administrative Assistant	Thomas A. Williams
Accounting Officer	Stan N. Chase
Personnel Officer	Marie M. Hoffman
Chief of Plant Operations	Beryl E. Kempton
Public Information Officer	
Business Services Officer	Donald Tosten

Schools and Departments

Director of Foundation Services	Norman S. Stanley
Bookstore Manager	Keith Nastiuk
Food Service Manager	Earl Maxon
Foundation Accountant	Eva Jensen

SCHOOLS AND DEPARTMENTS

<i>School of Letters, Arts and Science</i>	Miles D. McCarthy, Dean
	J. Justin Gray, Associate Dean
	Charles A. Povlovich, Associate Dean

Anthropology Department	Wayne W. Untereiner
Art Department	Gregory D. Ivy
Biological Science Department	(acting) Donald D. Sutton
Chemistry Department	Andrew F. Montana
Communications Department	J. William Maxwell
Drama Department	James D. Young
English Department	M. John Wagner
Foreign Languages and Literature Department	Walter D. Kline
Geography Department	Arthur D. Earick
History Department	Giles T. Brown
Mathematics Department	Dennis B. Ames
Music Department	Joseph W. Landon
Philosophy Department	William H. Alamshah
Physics Department	Raymond V. Adams
Political Science Department	Ivan L. Richardson
Psychology Department	Robert E. Edwards
Science and Mathematics Education Department	George C. Turner
Sociology Department	F. James Davis
Speech Department	Seth A. Fessenden

<i>School of Business Administration and Economics</i>	Donald S. Tull, Dean
	Jack Pontney, Associate Dean
Accounting Department	Dorsey E. Wiseman
Economics Department	Norman Townshend-Zellner
Finance Department	(acting) Dorsey E. Wiseman
Management Department	Stephen J. Barres
Marketing Department	Frank L. Roberts
Quantitative Methods Department	Herbert C. Rutemiller

<i>School of Education</i>	Kenneth R. Doane, Dean
	Eugene L. McGarry, Associate Dean

Program Directors:

Elementary Education	Barbara A. Hartsig
Secondary Education	James W. Cusick
Pupil Personnel	L. O. Brockmann
School Administration	Alden W. Smith
Junior College Education	Gerhard E. Ehmann
Reading Education	Hazel M. Croy
Special Education	Wayne D. Lance
Health Education, Physical Education and Recreation Department	Elmer L. Johnson

<i>School of Engineering</i>	Robert G. Valpey
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COLLEGE COMMITTEES 1966-67

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Kenneth R. Doane
Gerhard E. Ehmann
Julian F. S. Foster
Lois M. Herron
Bernard L. Hyink
J. E. Lyons

Miles D. McCarthy
Stuart F. McComb
Edward W. Smith
Norman S. Stanley
Donald S. Tull
Robert G. Valpey
ASB President

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Levern F. Graves, *Vice Chairman*
James W. Cusick, *Secretary*
Gertrude M. Reith, *Treasurer*
Dennis B. Ames
Warren A. Beck
Ronald M. Bristow
Edwin R. Carr
Roland L. Calhoun
Sherwood P. Cummings
Lawrence B. de Graaf
Seth A. Fessenden
David M. Feldman
Morton C. Fierman
George Giacumakis, Jr.
J. Justin Gray
Paul C. Hayner
Gregory D. Ivy
Emmett T. Long
Walter D. Kline
William B. Langsdorf,
President of the College

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James A. McCleary
Eugene L. McGarry
Willis E. McNelly
Paul C. Obler
Frank L. Roberts
Danton B. Sailor
Paulina J. Salz
L. Donald Shields
Edsel F. Stiel
Donald D. Sutton
Eric A. Teel
Norman Townshend-Zellner
Ernest W. Toy, Jr.
Dorsey E. Wiseman
Allen M. Zeltzer
Associated Students Representative
* * *

Lee R. Kerschner (*Academic Senate*)
Paul J. Pastor (*Academic Senate*)
Charles A. Povlovich
(*Parliamentarian*)

Campus Planning Committee

William B. Langsdorf, *Chairman*
Ernest A. Becker
Jack C. Emmons, *College Facility*
Planner, Office of Chancellor
Bernard L. Hyink

J. E. Lyons
Stuart F. McComb
John W. Olsen
Herbert J. Powell,
Consulting Architect

Academic Affairs Cabinet

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Ralph E. Bigelow
Sherwood P. Cummings
Kenneth R. Doane
Gerhard E. Ehmann
J. Justin Gray

Miles D. McCarthy
Eugene L. McGarry
Jack Pontney
Charles A. Povlovich
Ernest W. Toy, Jr.
Donald S. Tull
Robert G. Valpey

College Committees

Graduate Council

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Louis O. Brockmann
Arthur D. Earick
Jack A. Pontney

Alvin M. Rothman
Betty M. Unterberger
James D. Young

Advisory Committee on Radiological Safety

Robert E. Spenger, *Chairman*
Raymond V. Adams,
Radiological Safety Officer

L. Jack Bradshaw
Jack E. Lyons
Helen L. Morton, M. D.

Council on Educational Television

Giles T. Brown, *Chairman*
John H. Bryden
James W. Cusick
Raymond E. Denno

Kenneth R. Doane
J. William Maxwell
James D. Young
Allen M. Zeltzer

Student-Faculty Athletics Board

James A. McCleary, *Chairman*
Elmer L. Johnson, *Secretary*
C. Russell Beaton
Ernest A. Becker

Andrew F. Montana
Kit Johnston
Ronald Pogue
Robert Roland

Student-Faculty Lecture Series Board

Robert S. Feldman, *Chairman*
Gerhard E. Ehmann,
Executive Secretary
Roger R. Dittman
Paul T. Kinney
Thomas M. Sessions

M. John Wagner
Milton L. French
Dennis L. McCleary
John Moore
John L. Weiman

Student-Faculty Publications Board

Allen M. Zeltzer, *Chairman*
David J. Pivar
M. John Wagner

Gary Orso
Michael McEvoy

Student-Faculty Public Events Board

Gerald L. Boarino
Alvin J. Keller

William C. Langworthy

STANDING COMMITTEES OF THE FACULTY COUNCIL

1966-67

Academic Standards Committee

Eugene McGarry, *Chairman*
F. James Davis
Cecil Thompson

Wayne Untereiner
Ralph Bigelow, *ex officio*

Curriculum Committee

June Salz, *Chairman*
Kenneth Doane
Gregory Ivy
Hazel Jones
Paul Obler

Jack Pontney
Don Sutton
Robert Valpey
Bernard Hyink, *ex officio*

College Committees

Educational Services Committee

Don Austin, *Chairman*
Warren Beck
Paul Kinney

Dorsey Wiseman
Gerhard Ehmann, *ex officio*

Elections Committee

Charles Bell, *Chairman*
Paul Hayner
Sylvia Lane

Charles Povlovich
Alvin Rothman
Elmer C. Schneider

Faculty Affairs Committee

Ida Coppolino, *Chairman*
William Alamshah
Roland Calhoun
Seth Fessenden

Ray Johnson
Walter Kline
Gertrude Reith, *ex officio*

Library Committee

Morton Fierman, *Chairman*
George Etue
Richard Gilbert

Joan Greenwood
Ernest Toy, *ex officio*

Personnel Committee

Barbara Hartsig, *Chairman*
Edwin Carr
Justin Gray

John Mason
J. William Maxwell
James McCleary

Research Committee

David Feldman, *Chairman*
Robert Edwards
Myrtle Imhoff
Ivan Richardson
Donald Shields

Norman Townshend-Zellner
Ernest Toy
James Young
Jack Lyons, *ex officio*
Edward Smith, *ex officio*

Student Affairs Committee

George Giacomakis, *Chairman*
Stephen Barres
Natalie Barish
Edwin Duerr
Edward Livengood

Willis McNelly
David Thorsen
Allen Zeltzer
Ernest Becker, *ex officio*

Constitutional Revision Committee

Charles Povlovich, *Chairman*
Edwin Carr

Hazel Jones
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Executive Committee

Julian Foster, *Chairman*
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James Cusick
Lawrence de Graaf

Levern Graves
Gertrude Reith
Norman Townshend-Zellner

Preprofessional Committee

PREPROFESSIONAL COMMITTEE 1966-67

Premedical Committee

Miles D. McCarthy, *Chairman*
Ernest A. Becker
Ronald J. Crowley
Andrew F. Montana

Helen L. Morton, M.D.
Edsel F. Stiel
Donald D. Sutton

The president of the college and the chairman of the faculty council are ex officio members of all faculty committees.

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OBJECTIVES AND HISTORY

OBJECTIVES OF CALIFORNIA STATE COLLEGE AT FULLERTON

The main functions of an institution of higher learning are to disseminate and advance knowledge. The philosophy which guides an institution can limit or promote the successful achievement of these objectives. Therefore, from its inception, the college has directed its educational program toward the fullest possible development of the individuals who participate in it. For both faculty and students this entails a commitment to high standards of scholarship, a comprehensive rather than a narrow approach to major areas of study, and a concern with research and other creative activity.

The college holds to the belief that an enduring educational experience must be founded upon exploration of our cultural heritage, through basic studies in the liberal arts and sciences, and that it can and should at the same time prepare for success in a chosen occupation or profession. Accordingly, the required general education program has as its objective the development in each student of:

1. The effective use and interpretation of the written and spoken language.
2. An understanding of the wide range of human endeavor and accomplishments in liberal arts and sciences, their interrelationships, and the various choices and values they represent.
3. An understanding of information and principles in some areas of the liberal arts and sciences in sufficient depth to encourage critical and creative thought and expression.
4. A spirit of inquiry into the past and into the future, in order to cope with conditions in the continually changing world.
5. An understanding of the rights, privileges and responsibilities of citizenship in the community and nation, and of effective participation in today's world.

In addition, the college requires of all students who are candidates for a degree—whatever their special purpose—the pursuit of a subject major.

(For specific details, see page 68).

HISTORY OF CALIFORNIA STATE COLLEGE AT FULLERTON

Orange County is situated on a coastal plain southeast of the City of Los Angeles. A decade ago the county was regarded as being one of rural characteristics, with emphasis on the production of oranges and other citrus fruits. Today it is referred to as one of the fastest growing counties in the nation, having multiplied its population almost five times in the last fifteen years. Orange County reached the one million mark in population in 1963, to make it the third most populous county in California. The median age of the population is 26.6 years, and 42 per cent are less than 20 years of age. Much of the county is still rural, the county having a population density of 1.37 persons per acre. There are sections, however, that are as dense as 16.64 persons per acre. Every indication points to continued growth, with a predicted population of two million by 1980. Thousands of acres of irrigated agricultural land have been converted to subdivisions, business and industry, freeways, and schools. The electronics industry is the leader in growth among industries and businesses in the county.

Accreditation

California State College at Fullerton was established by act of the Legislature under the terms of Chapter 1681 of the Statutes of 1957. On March 13, 1958, the Public Works Board selected the site of the college, located in the northeast section of the City of Fullerton. It now consists of 225 acres, and is bounded on the north by Yorba Linda Boulevard (formerly Pioneer Avenue), on the west by State College Boulevard (formerly Cypress Avenue), on the south by Nutwood Avenue, and on the east by the proposed Orange Freeway. The college is located within five miles of 60 percent of the industry and within 10 miles of 70 percent of the population of Orange County. It is also within easy driving range of Orange County beaches and mountains, and of the other cultural centers of southern California and their recreation and entertainment areas.

Dr. William B. Langsdorf was appointed president of the college on January 16, 1959, and with two aides came to Fullerton on March 2, 1959, to begin planning for the opening of the new college. Arrangements were made with the Fullerton Union High School District to lease quarters for the college administrative offices on the Fullerton Union High School campus, and to hold classes at the Sunny Hills High School for the 1959-60 school year. During the first eight years, the average annual enrollment has grown from 466 to 7,500 individuals. Envisioned are average annual enrollments of 10,000 in 1969-70; 15,000 in 1974-75; and 30,000 individuals when the college reaches its master plan enrollment of 20,000 full time equivalent students in the early nineteen, eighties.

In the fall of 1960, the college opened classes on its own campus where it occupied 12 temporary buildings. The first permanent building, the Letters and Science Building, was occupied in 1963. The Music-Speech-Drama Building was completed in 1964, the Physical Education Building in 1965, and the Library and Audiovisual Center in 1966. Other permanent buildings will be opened in approximately the following order: Cafeteria, 1967; Humanities-Social Sciences Building, 1968; Art Building, 1969; Administration-Business Administration Building, and Engineering Building, 1970; and Education Building, 1971. Additional buildings are being planned for the future.

ACCREDITATION

The college is fully accredited by the Western Association of Schools and Colleges, California State Board of Education, the American Association of Collegiate Schools of Business, and the National Association of Schools of Music.

SPECIAL PROGRAMS AND SERVICES

INTERNATIONAL PROGRAMS

The California State Colleges offer academic year programs of study at a number of distinguished universities abroad. For 1967-68 the cooperating universities are: University of Aix-Marseille, France; Free University of Berlin and University of Heidelberg, Germany; University of Florence, Italy; Waseda University, Tokyo, Japan; University of Granada and University of Madrid, Spain; University of Stockholm and University of Uppsala, Sweden; National University, Taiwan. Academic work successfully completed at the cooperating universities abroad may be applied toward the degree requirements of the college in accordance with college regulations.

A selection among applicants from all California State Colleges is made on the basis of academic, linguistic and personal qualifications. The criteria are:

- (a) Upper division or graduate standing by the beginning of the academic year abroad;
- (b) Academic achievement;
- (c) Proficiency in the language of instruction;
- (d) Faculty recommendations.

Cost to the student includes round trip transportation from San Francisco to the host university, room and board for the academic year, and medical insurance. In 1967-68 these costs are: France, Germany, Spain, \$1,970; Italy, Japan, \$2,070; Sweden, \$2,270; Taiwan, \$1,770. Payments may be scheduled throughout the year. Programs in Japan, Sweden and Taiwan do not require previous linguistic preparation; applicants for all other programs must demonstrate adequate facility in the language of instruction at the host university.

Application for the 1968-69 academic year should be made early in the fall semester of 1967. Detailed information may be obtained at the counseling center, Room S264, or by writing to the Office of International Programs, the California State Colleges, 1600 Holloway Avenue, San Francisco 94132.

LATE AFTERNOON AND EVENING CLASSES

The educational program of the college is offered continuously from 8 a.m. until 10 p.m., Monday through Friday. Classes held during the late afternoon and evening hours are part of the regular college offering and are taught by the college faculty.

Students enrolling in these classes must have met all admission requirements of the college, including the filing of an official application for admission, the filing of complete official transcripts from other schools and colleges, and in the case of lower division applicants, the completion of required tests for admission.

A class schedule, listing all classes meeting in the late afternoon and evening hours, may be obtained at the Titan Bookstore or the Office of the Coordinator of Evening Classes. Applications of new students for admission to the college must be filed with the Office of Admissions prior to the deadline. This date, for both the fall and spring semesters, is carried in the calendar of this catalog.

SUMMER SESSIONS

The college will conduct two six-week summer sessions, from June 19 through July 28, and from July 31 through September 8. There will also be two-week and three-week workshops running concurrently. Day and evening classes are scheduled, and credits earned in the summer sessions meet degree and credential requirements with the same validity as credits secured in the fall and spring semesters. A maximum of one unit of college credit may be earned for each week of attendance.

In addition to much of the regular curriculum, summer offerings include special workshops and seminars for teachers and other professional groups. A program of recreational activities is planned to serve a wide variety of interests.

A tuition fee of \$19.75 per unit is charged, plus an associated student membership fee of \$2 per person. The summer session class schedule announcing all courses is published on February 1 or earlier, and may be obtained by writing the dean of summer session.

EXTENSION PROGRAM AND SERVICES

The college cooperates with all community agencies (business and professional associations, chambers of commerce, school districts, industrial firms, economic and cultural groups, city and county governmental units, etc.) in the development of educational programs. These activities may be classes, conferences, institutes, workshops, seminars or they may be consultant services, depending upon the need. In this manner, the college provides opportunities for the professional, vocational, and cultural improvement of persons unable to pursue an academic program in residence.

Extension Courses. Off-campus extension courses may be planned for those wishing to earn college credit and under certain conditions this credit may be applied toward a degree or a teaching credential. Extension offerings are equivalent in level and quality to residence courses. These courses may be modified and designed to meet the particular needs of certain groups and may be initiated at various times during the year. Any adult may enroll in an extension course, provided he meets the prerequisites of the course. Matriculation is not required. Refer to the section of this catalog on fees and expenses for information on fees.

Persons wishing information about organizing an extension course or about current extension offerings should address inquiries to the director of extension.

Conferences and Institutes. The college is interested in taking an active part in the development of conferences and institutes. The conference director, in cooperation with the respective academic departments and divisions, will work with agency representatives in planning the program, selection of a competent staff, and the general conduct of the conference.

Requests for information or assistance with particular educational problems which might be met through the extension program should be directed to the conference director.

THE COLLEGE LIBRARY

The college library is housed in the first and fourth through sixth floors of the new Library Building completed in the summer of 1966. The total space occupied by the library is approximately 115,000 square feet. As collections and enrollments grow, the library will occupy the remaining two floors of the building. The floors now available are designed to seat approximately 1,625 persons and to house about 205,000 volumes, besides related materials. Group study rooms, typing rooms, study

carrels, seminar rooms, and individual and group music listening rooms are available. The library has facilities for Xerox and Filmac copying.

The main book collection will contain about 143,000 volumes at the beginning of the 1967-68 academic year. During the year about 60,000 volumes will be added. The library also has about 9,000 volumes of sample elementary and secondary textbooks and juvenile literature, and a collection of about 6,000 pamphlets and other ephemera.

The library is a selective depositor for U.S. government documents. This collection will reach a total of nearly 60,000 items in the course of the academic year. The library is also a depository for California curriculum materials, which will reach about 3,500 items during the year, and for California state documents.

In addition to these collections the library has about 7,000 reels of microfilmed U.S. government documents, chiefly State Department records, but also including such items as the Congressional Record and various presidential papers; about 11,000 reels of other microfilmed materials, mostly files of newspapers and periodicals, and about 7,000 volumes on micro-opaque cards and sheet microfilm. Readers for these materials are available adjacent to their storage area on the fourth floor.

The library subscribes to about 3,000 periodicals. In addition to the filmed backfiles mentioned above, the periodicals collection contains about 8,000 bound volumes.

Besides attempting to build a balanced collection of basic works, the library, as a part of its development program, has concentrated its efforts in several subject areas. As a result, relatively strong collections are now available in such fields as World War II, international relations since 1870, Kant, Shakespeare, Melville, Joyce, historiography and historical bibliography, and contemporary music. As the result of a gift, a special collection of about 1,200 volumes on angling is also available. These collections will increase in strength and number during the next several years.

Library hours are posted in the elevator lobby and at other convenient locations in the building. A library handbook is available at the reference desk, where professional librarians are on duty at all times to aid students and faculty in the use of library resources.

AUDIOVISUAL AND TELEVISION CENTER

The Audiovisual and Television Center is located in the basement of the Library Building and occupies approximately 20,000 square feet. Services to faculty and students include use of all types of audiovisual equipment and materials (motion pictures, filmstrips, instructional kits, tape recordings and study prints); campuswide distribution of AV materials and equipment upon request, rental of films from major rental libraries in the United States; for faculty: production of transparencies, embossograph, charts, posters and diagrams; production of three-dimensional media; and all types of still and motion photography. Eight preview rooms and four audition rooms are available for faculty and student use.

COMPUTER CENTER

The present computing facilities include an IBM 1620, Model 2, with an IBM 1311 disc drive and other peripheral equipment. This facility is used for college administrative applications as well as faculty research and instruction.

Instruction on computers is offered by several departments in the college. Students are encouraged to use the computer themselves but processing of students' computer programs by the staff is also available. The Computer Center maintains a large library of computer programs and offers consulting facilities.

THE CALIFORNIA STATE COLLEGE FOUNDATION

The California State College Foundation was established and incorporated in October 1959 to provide essential student and faculty services which cannot be provided from state appropriations; to supplement the program and activities of the college in appropriate ways; and to otherwise assist the college in fulfilling its purposes and in serving the people of the State of California—especially those of the area in which the school is located.

Services provided by the foundation include the operation of various college auxiliary organizations including the bookstore, residence halls, and food service; business administration of scholarship and student loan funds; sponsored research programs; and certain institutes.

The foundation's overall policies are administered by a board of trustees made up of members of the college faculty, administration and community leaders. An advisory council to the foundation composed of leading industrial, scientific, business and civic leaders has also been established to provide the board with counsel and advice.

RESEARCH CENTERS AND CLINICS

CENTER FOR ECONOMIC EDUCATION

The Center for Economic Education is one of 24 such centers at colleges and universities in the United States working with the national Joint Council on Economic Education to expand economic understanding. Center programs include (1) services to schools and colleges, individual educators, and the community; (2) research and professional training; and (3) operation of an economic education information center. The center consists of a broadly based executive policy board; an administrative staff; and formally organized groups of participating users.

CENTER FOR GOVERNMENTAL STUDIES

The Center for Governmental Studies is part of the Department of Political Science's expanding research and teaching activities. Established in 1965, the center has four major functions: first, to collect and make available fugitive governmental and political materials; second, to assist local government agencies and citizen groups in the study of local governmental problems; third, to provide students with instruction and experience in research techniques and methodology; and fourth, to provide facilities for community institutes and seminars.

REAL ESTATE RESEARCH AND PUBLICATIONS

The college participates in a continuing research program, with special emphasis on urban development in Orange County. Studies are undertaken in cooperation with various public and private agencies, including the University of California at Irvine. In conjunction with the research program the college publishes a quarterly *Urban Review*, which is distributed nationally and sponsored by the California Division of Real Estate. Opportunities exist for student participation in the various research activities.

SPEECH AND HEARING CLINIC

The College Speech and Hearing Clinic operates as a nonprofit California State College Foundation agency. In addition is an off-campus clinical program for graduate students that involves experiences within medical and paramedical settings. The primary purpose of the clinics both on campus and off campus is to provide opportunities for teaching, service and research. College students receive clinical experience and opportunity for observation.

STUDENT PERSONNEL SERVICES

Student Personnel Services at the college are administered from the Office of Admissions and Records, the Office of Relations with Schools, the Counseling and Testing Center, the Activities and Housing Office, the Office of Placement Services, and the Student Health Center. Collateral responsibilities include foreign student advising, coordination of the California State Colleges international student programs, selective service and veterans' affairs, and financial aids. Coordination of this general program rests with the dean of students.

RELATIONS WITH SCHOOLS

The Office of Relations with Schools administers a collegewide program to articulate college curricula with other colleges and schools and to offer preadmission guidance to prospective students, their parents, and school counselors. The college believes this program should be vigorously pursued so students may (1) choose the kind of college experience appropriate for them and (2) may have the proper academic preparation for the curricula of this college.

STUDENT ACTIVITIES AND HOUSING

ACTIVITIES

The college recognizes the important role of student activities in education. The activities program represents a variety of areas intended to serve every student according to his interest, ability and available time.

All registered students are members of Associated Students of California State College at Fullerton. The Associated Students are governed through the executive, legislative, and judicial branches of the Associated Students organization. The president and commissioners constitute the executive branch which has the responsibility for the development and administration of the program, including such activities as publications, drama, religious clubs, intercollegiate athletics, intramural athletics, forensics, and music. The Associated Students Senate has full responsibility for legislation by which this program is directed and for the allocation of student funds for the program. The judicial branch serves as the legal body for interpretation of the constitution and enforcement of Associated Student policies.

Student Organizations

Student organizations are encouraged and aided by the college whenever students express a desire for activities which add to their educational opportunities. As a relatively young institution, the development of new organizations to serve the needs of a growing student population is rapid. More than 50 organizations are now recognized, including one local and three national social fraternities, three local social sororities, departmental professional fraternities, and many service, special interest and religious groups.

Student Publications

The college newspaper, the *Titan Times*, is published twice a week as a product of the journalism classes and financed by the Associated Students. In addition, a handbook is available for use by organizations in the development and operation of their program. The *Titan Illustrated*, a literary magazine, is also published by students. The yearbook, the *Titan*, published annually by the Associated Students, records the year's activities.

Student News Bureau

The Student News Bureau was organized in 1960 to provide the outside press with news of student activities on the campus. It is financed by a budgeted allocation from Associated Students.

Athletics

The intercollegiate athletic program consists of teams in baseball, basketball, cross country, golf, gymnastics, soccer, swimming, tennis, track and field, water polo and wrestling. Football will be added to the program in 1969-70. A year-round program of intramural activities includes basketball, badminton, flag football, handball, softball, tennis and wrestling, swimming and weight lifting.

The college is not a member of an established athletic conference, but plans are underway for membership in a conference which would be compatible with the aims and purposes of the college. Since the fall of 1965 all indoor home athletic contests have been played in the Titans' new Physical Education Building.

In the spring of 1960, a group of Orange County citizens organized a Boosters Club to help foster intercollegiate athletic competition at California State College at Fullerton. Its members are dedicated to the encouragement of a sound program of athletics and contribute financially and by way of enthusiasm to helping to develop a first-rate athletic program based on a well-rounded concept of the relationship between sports and academic achievement. All athletic teams compete under rules of the National Collegiate Athletic Association (NCAA).

Intramural Activities

The intramural program is conducted on a seasonal basis and involves a variety of athletic and recreational activities for both men and women. Rules and regulations which govern participation in the intramural program are available in the Office of the Director of the Intramural Program or in the Office of Student Activities.

Participation by women in extramural volleyball, basketball, tennis, and golf is provided through membership in the Extramural Coordinating Council of Southern California and the American Recreation and Athletic Federation for College Women.

HOUSING

The college provides housing for unmarried students in two modern residence halls. Designed for educational living, the halls have study areas plus lounge areas for speakers and discussion groups or meetings. Ample social and recreational facilities are available.

Each room has its own private bath. The buildings are fully air conditioned and carpeted. The dining hall is between and attached to the two residence halls.

The residence advisers and assistants of each hall promote a social, cultural and educational program which supports and expands the classroom experience. The resident has the opportunity to study, assume responsibility through hall government, and discuss serious topics of the day with guest speakers while in a healthful living situation.

Because of the importance of the living arrangements to educational achievement, California State College at Fullerton requires that all students under 21 years of age who are not married must live either at home or in college-approved housing. Approved housing is at present limited to the residence halls, fraternities and sororities.

STUDENT HEALTH SERVICES

The purpose of the Student Health Center is to help keep the student in class by providing high quality medical service early in the course of an illness, to provide a healthy and sanitary environment on campus in which to live and study, to stimulate better health awareness among the students, and to educate them to the high standards of good therapeutic and preventive care.

The Student Health Center is in Room 580 of the Letters and Science Building and is open from 8 a.m. to 5 p.m. each weekday that classes are in session. No staff is available for night or weekend services of any kind, and there are no off-campus calls made at any time. Special care and time are given to sympathetic counseling of both emotional and physical problems. Several physicians and nurses are continuously on duty during the day to care for emergencies and for the treatment of immediate illnesses and injuries.

Among the services presently offered are the following:

1. Diagnosis and treatment of the usual medical and surgical problems.
2. Physical examinations as required.
3. Emergency care.
4. Routine immunizations.
5. Laboratory facilities.
6. Followup care as may be recommended by the student's private physician within the scope of available facilities.
7. Electrocardiograms.
8. Physical therapy treatment.
9. Medical counseling.
10. Psychiatric counseling and diagnosis.
11. Specialists' diagnostic services when directly referred by the Student Health Center.

All fees for care in the Student Health Center, unless otherwise specifically stated, have been prepaid by the State of California and by the student's registration fee. All undergraduates and all graduates registering for *more than 6 units* of credit are eligible for all or any of the health services offered. *Emergency* service is available to everyone on campus.

Health, Accident, Hospital Insurance

All students are urged to carry this type of insurance. An excellent policy at a low premium is available to all students through the Associated Students' Business Office.

All students living in college-sponsored housing, and foreign students, are required to be covered by this policy.

PLACEMENT SERVICES

A centralized Placement Office is maintained with responsibilities for assisting students in finding both part-time and career employment. The college believes that it best serves both the student and employers only when its graduates have been placed in the professions for which they are prepared and trained.

Part-time Placement

Students wishing part-time jobs either on or off campus are eligible to receive the assistance of the office if they are taking seven units or more. New students may receive service as soon as they have notice of their admission to the college. Secretarial skills are in great demand; but calls for schoolbus drivers, custodians, teacher aids, draftsmen, waiters, clerks, youth and recreation leaders, sitters, gar-

deners, etc., are received. If students must augment their resources while going to school they are encouraged to limit their work hours to approximately 10 per week.

The college cooperates with the U.S. Department of Health, Education, and Welfare in providing work-study jobs. This program is made possible through the Economic Opportunity Act of 1964. Students who can establish "need eligibility" may work up to 15 hours a week during the school year and up to 40 hours in the summer. Under this program there are on-campus opportunities such as library and instructional aides, clerks, buildings-and-grounds aides, computer center aides, and laboratory and research assistants. Off-campus jobs in nonprofit community agencies include teacher aides, recreation leaders, office trainees, and administrative interns. *A limited number of these on- and off-campus positions are held open for incoming freshmen who qualify.*

Educational Placement

Students in the teacher education, pupil personnel services, supervision, or administration curriculum of the college, who are in the final semester of a credential program, or who are in student teaching or directed field work, are eligible to register and receive the services of the Placement Office, chief of which is help in establishing a professional employment file. Such registrants are supplied information in openings and helped to establish their candidacies in the school districts and educational institutions.

Business, Industry, and Government Placement

The Placement Office's assistance to students seeking career employment in business, industry, or public service involves help in defining occupational preference, providing active job leads, making up résumés, and arranging interviews on and off campus.

COUNSELING CENTER SERVICES

Students who need assistance with such concerns as choosing an academic major or vocational goal, with study skills, or with personal problems affecting their academic progress may obtain help through the Counseling Center. The staff of professionally trained counselors has available a variety of resources including occupational information files, special testing materials, college catalogs, and directories of various kinds to assist the student.

The Counseling Center also maintains contact with agencies and professional persons in the community to whom students may be referred.

Counseling services are available only to fully matriculated, registered students.

Testing

Testing programs are designed to serve a variety of purposes:

1. The primary purpose is that of giving instructional faculty and Counseling Center personnel supplementary information to use in helping the individual student.
2. Test results are also used to aid in the selection of students who are applicants for admission to the college, and to various programs within the college.
3. A third use is that of identifying students who have deficiencies in specific skills, such as English usage and mathematics.

Testing requirements for students seeking admission are listed in the admissions section of the catalog. Students seeking information about testing requirements for specific instructional programs should inquire in the appropriate instructional division or the Counseling Center.

Financial Aid

Foreign Students

Special services for* foreign students are coordinated by the foreign student adviser. These services include legal problems concerning visa status and employment; orientation to academic procedures and requirements; advisement related to finances, to social standards and customs; and to resources and opportunities offered by campus and community.

International Programs

Information concerning study opportunities for American students in foreign universities is available in the Counseling Center. The foreign student adviser coordinates the selection of students applying for admission to one of the international programs operated by the California State Colleges in eight foreign countries.

FINANCIAL AID

Scholarships

A limited number of scholarships are available for outstanding students. Qualified students should obtain scholarship applications from the Financial Aid Office, Room 270, Letters and Science Building, and return by April 15 for the fall semester and December 15 for the spring semester. Scholarship applications are evaluated by the Financial Aids Review Committee. Awards are based on scholastic record, financial need and personal qualifications. Some scholarships are limited to students majoring in specified disciplines. Departmental recommendations weigh heavily in such cases.

Scholarships offered by California State College at Fullerton are made possible by interested organizations, business firms and individuals. Recent contributors to the scholarship program include:

- Aunt Jemima's Pancake House, Disneyland
- Bert Noble Foundation
- California Congress of Parents and Teachers, Inc.
- California State Employees Association (CSCF Chapter)
- Edward Mittleman Memorial Scholarship
- Epsilon Lambda Chapter, Epsilon Sigma Alpha Sorority
- Fourth District, California Parents and Teachers Association
- Fullerton District Board of Realtors
- Fullerton Rotary Club
- Gamma Phi Beta Sorority (Orange County Alumnae)
- Kappa Delta Phi Sorority
- Kiwanis Club of Greater Fullerton
- Los Amigos Club of Fullerton
- Mu Phi Epsilon Scholarship Fund
- Music Teachers Association of Orange County
- Roberta King Maxwell Memorial Scholarship Fund
- Sadie Landon Memorial Music Scholarship Fund
- Sheryl Cummings Memorial Scholarship Fund
- Society of California Accountants (Orange County Chapter)

Loans

The generosity of organizations and individuals enables the college to offer short-term loans to students who meet unexpected financial difficulties of a temporary nature. Loans from these funds are made for various periods of time and to specified categories of students, according to college regulations and the wishes of the

Financial Aid

donors. The prime purpose of these loans is to meet educationally related expenses, and thus loans cannot be made for the purposes which are normally financed by private lending institutions. Application for a short-term loan may be made at any time during the school year.

The following is a listing of the loan funds available during the 1966-67 school year:

- Altrusa Club of Fullerton Loan Fund
- Betty Casault Memorial Loan Fund
- Brea Rotary Club Loan Fund
- California Retired Teachers Association (Laura Settle Fund)
- Donna Cherry Memorial Fund
- Gordon S. Fyfe Memorial Loan Fund
- Juliann Ashford Memorial Loan Fund
- Kenneth G. Ryhal Memorial Loan Fund
- Laura E. Imhoff Memorial Loan Fund
- Marcella Fisk Memorial Loan Fund
- Michael R. Young Memorial Loan Fund
- National Defense Education Act Loan
- Newport Harbor Children's Theater Loan Fund
- Pan-Hellenic Club of Northern Orange County Loan Fund
- Rotary Club of Fullerton, Foreign Students Loan Fund
- Soroptimist International Club of Fullerton Loan Fund
- Student Emergency Loan Fund
- Trust-Davis Memorial Loan Fund
- Wilma Doig Steen Memorial Loan Fund
- Zonta Club of Fullerton Loan Fund

California State College at Fullerton joins with the federal government and the State of California in making long-term, low-interest loans available to students under the National Defense Education Act. Details and applications are available at the Financial Aid Office. Deadlines for submissions of applications are December 1 for the spring semester, April 1 for the summer sessions and July 15 for the fall semester.

All unmarried first-time applicants for an NDEA loan are required to file a parents' confidential statement with the College Scholarship Service, Box 1025, Berkeley 94701, designating California State College at Fullerton as one of the recipients. The parents' confidential statement assists the college to evaluate financial need, and, since it must be on hand before the loan application can be acted upon, early submission is advised. These forms can be obtained at most secondary schools or at the Financial Aid Office.

United Student Aid Funds

Long-term loans are also available under the United Student Aid Funds program to assist students who have completed their freshman year. United Student Aid Funds, Inc., a private, nonprofit corporation, will endorse loans to students upon recommendation by the college.

A maximum of \$1,000 per year, or a combined total of \$3,000, may be borrowed for undergraduate or graduate education. The loan is repaid in 36 monthly installments, beginning the fifth month after the student leaves school. Maximum interest rate is 6 percent simple. Applications and additional information are available at the Financial Aid Office.

Financial Aid

California State Guaranteed Loan Program

The college cooperates with the State of California and private lending institutions in making guaranteed loans available to full-time students. A loan recipient under this program must meet the following qualifications:

- a. be a legal resident of California
- b. have an adjusted family income of less than \$15,000 per year
- c. be a full-time student
- d. be enrolled and in good standing at the college or accepted for enrollment.

The interest on these loans may not exceed 6 percent per annum on the unpaid balance. The United States Office of Education will pay all interest while the student is enrolled as a full-time student and 3 percent thereafter. Repayment ranges from 5 to 10 years following graduation, according to arrangements made with the lender. Applications and further information may be obtained from the Financial Aid Office, Room 270, Letters and Science Building.

ADMISSION AND REGISTRATION

ADMISSION TO THE COLLEGE
REGISTRATION
ACADEMIC ADVISEMENT

ADMISSION TO THE COLLEGE

Requirements for admission to California State College at Fullerton are in accordance with Title 5, Chapter 5, Subchapter 2 of the California Administrative Code as amended by the Board of Trustees of the California State College on January 21, 1965. A prospective applicant who is unsure of his status under these requirements is encouraged to consult with a school or college counselor or the college admission office.

ADMISSION AS A FRESHMAN

An applicant who has had no college work will be considered for admission under one of the following provisions. Except as noted, submission of the results of the Scholastic Aptitude Test (SAT) or the American College Test (ACT) is required.

California High School Graduates and Residents

An applicant who is a graduate of a California high school or a legal resident for tuition purposes must have a grade point average and total score on the SAT or composite score on the ACT which provides an eligibility index placing him among the upper one-third of California high school graduates. For 1967-68 the minimum eligibility index is 3,072 using the SAT (741 with the ACT). It is computed by multiplying the grade point average by 800 and adding the result of the total SAT score, or by multiplying the grade point average by 200 and adding the result to 10 times the composite ACT score. The grade point average is based upon the last three years and does not include physical education or military science. The table below does not cover every case, but gives several examples of the test score needed with a given grade point average to be eligible for admission.

<i>Grade point average</i>	<i>SAT/ACT needed</i>
3.20 and above	Eligible with any score
2.80	832/19
2.40	1152/27
2.00	1472/35
1.99 and below	Not eligible

Nonresidents Graduating From High Schools in Other States or Possessions

An applicant who is a nonresident for tuition purposes and who is a graduate of a high school in another state or a U.S. possession must have an eligibility index which would place him among the upper one-sixth of California high school graduates for 1967-68. The minimum required eligibility index is 3,402 using the SAT (826 with the ACT) and is calculated as in the previous section.

Graduates of High Schools in a Foreign Country

A graduate of a foreign high school must have preparation equivalent to that required of eligible California high school graduates. The college will carefully review the previous record of all such applicants and only those with promise of academic success equivalent to that of eligible California high school graduates will be admitted. Such applicants are not required to take either the SAT or the ACT tests. Ordinarily, the college does not accept foreign student applicants directly from foreign countries.

Admission of Undergraduate Transfers

Non-high-school Graduates

An applicant who is over 21 years of age, but has not graduated from high school, will be considered for admission only when his preparation in all other ways is such that the college believes his promise of academic success is equivalent to that of eligible California high school graduates.

High School Students

A student enrolled in high school as a senior will be considered for enrollment in certain special programs if he is recommended by his principal and his preparation and ability are such that in the judgment of the college, the probability of his academic success is equivalent to that required of eligible California high school graduates. Such admission is only for a given program and does not constitute the right to continued enrollment. Such applicants are not required to take either the SAT or the ACT test.

Other Applicants

An applicant not admissible under one of the above provisions should enroll in a junior college or other appropriate institution. Only under the most unusual circumstances will such applicants be permitted to enroll in the college. Permission is granted only by special action.

Recommended Preparation

Overall excellence of performance in high school subjects and evidence of academic potential provide the best bases for predicting success at California State College at Fullerton. While no course pattern is required, the applicant to be prepared properly to undertake a full program of studies and particularly to pursue the required program in general education, is strongly encouraged to include the following subjects in his preparation for college work at Fullerton: college preparatory English; foreign language; college preparatory mathematics; college preparatory laboratory science; college preparatory history or social science, or both; and study in speech, music, art, and other subjects contributing to a general academic background.

ADMISSION OF UNDERGRADUATE TRANSFERS

An applicant who meets the requirements for admission with freshman standing and who has earned credit in one or more accredited junior colleges, colleges, or universities may be admitted if he has a grade-point average of 2.0 (grade C on a five-point scale) or better in the total program attempted at such colleges or universities and is in good standing at the last degree-granting college or university attended.

An applicant who does not meet the requirements for admission with freshman standing must as a condition for admission have earned 60 or more units of college credit with a grade-point average of 2.0 (grade C on a five-point scale) or better in the total program attempted and must be in good standing as noted above.

An applicant who does not meet the requirements set forth above is eligible for admission on probation with advanced undergraduate standing if, in the opinion of the proper college authorities, he is likely to succeed in an academic program.

Ordinarily, consideration for probationary admission is granted only to the mature applicant who, while his total college record does not meet the admission requirements, has demonstrated good academic ability through recently completed college work elsewhere.

Readmission of Former Students

ADMISSION OF GRADUATE STUDENTS

An applicant who has completed a four-year college course and holds an acceptable baccalaureate degree from an accredited institution, or who has completed equivalent academic preparation as determined by the college, will be admitted as an unclassified graduate student. Such admission does not constitute acceptance to graduate degree curricula. For information about requirements and procedures for admission to graduate degree courses of study (classified graduate status) see page 70 of this catalog.

ADMISSION OF FOREIGN STUDENTS

At the present, the college usually does not accept foreign student applicants directly from foreign countries, with certain very rare exceptions. Only two categories of foreign students will normally be accepted:

- (1) Those who have completed a two-year transfer program in a junior college in the United States with a good academic record.
- (2) Those who have completed a bachelor's degree in an accredited college in the United States and wish to enroll as graduate students.

Application procedures are the same as for other students, except that foreign language transcripts must be accompanied by certified English translations.

THE SUMMER SESSION STUDENT

Although the quality of the program and most of the course offerings are the same as in the regular session, the college does not require an advance application or transcripts from students registering for credit courses in the summer session. However, students must be high school graduates and are expected to have satisfied the prerequisites for the courses in which they register. Admission to summer session does not grant admission to the regular session.

READMISSION OF FORMER STUDENTS

A student previously enrolled in the college, planning to return after an absence of one or more semesters, must file a new application for admission in accordance with procedures set forth below. The application fee of \$5 is required if the student was not enrolled in either of the two semesters prior to the semester to which he is seeking admission or if he was enrolled in another institution during his absence from California State College at Fullerton. Unless a leave of absence was granted, catalog requirements at the time of readmission will apply.

Former Students in Good Standing

A student who left the college in good standing will be readmitted provided any academic work attempted elsewhere since the last attendance does not change his scholastic status. Transcripts of the record of any work attempted in the interim are required.

Former Students Who Were on Probation

A student on probation at the close of his last enrollment will be readmitted on probation provided he is otherwise eligible. The student must furnish transcripts of any college work taken during his absence.

Procedures for Admission

Former Students Who Were Disqualified

The readmission of a previously disqualified student is by special action only. Ordinarily the college will consider an application for reinstatement only after the student has remained absent for a minimum of one semester following disqualification and has fulfilled all recommended conditions. In every instance, readmission action is based on evidence, including transcripts of study completed elsewhere subsequent to disqualification, which in the judgement of the college warrants such action. If readmitted, the student is placed on scholastic probation.

PROCEDURES FOR ADMISSION

All prospective students, whether for part-time or full-time programs of study in day or evening classes, must file an application for admission and other required documents not later than the announced deadline. Applicants must be formally admitted to the college to enroll in classes. Because of probable enrollment limitations prospective students are advised to file applications for admission earlier than the announced deadline.

How to apply:

1. Submit a completed application for admission accompanied by the required application fee of \$5.
2. Request transcripts of record of all previous scholastic work from each school or college attended to be sent directly to

Office of Admissions and Records
California State College at Fullerton
800 North State College Blvd.
Fullerton, California 92631.

The transcripts required are

—*for undergraduates*—

- (a) the high school transcript, and
- (b) a transcript from each college or university attended;

—*for graduates*—

- (a) applicants for unclassified graduate standing with no degree or credential objective must submit a transcript from the college or university where the baccalaureate was earned;
- (b) applicants for a master's degree or a teaching credential must submit two copies of the transcript from the institution where the baccalaureate was earned and one copy from each other college or university attended;
- (c) applicants for both a master's degree and a teaching credential must submit three copies of the transcript from the institution where the baccalaureate was earned and two copies from each other college or university attended.

All transcripts must be received directly from the issuing institution to be considered official and cannot be returned to the student.

3. If required, submit the scores from either the Scholastic Aptitude Test or the American College Test. Scores are required for all undergraduate applicants with fewer than 60 completed semester units of study (90 quarter units).
4. Submit the required health forms.
5. Complete a statement of residence.

Admission to Credential Programs

Admission to the college as a student does not constitute admission to the teaching credential program. Students who plan to work toward teaching credentials must apply to the School of Education during their first semester of attendance. Details are available from the School of Education.

Cancellation of Admission

A student who is admitted to the college for a given semester but who does not register in the specified semester will have his admission canceled. The student must file a new application form when he again seeks admission and must follow the complete application procedure and meet the then current admission requirements.

Honors at Entrance

Honors at entrance are awarded to both freshmen and transfer students who have demonstrated outstanding achievement in past academic work. For first-time freshmen with no previous college units earned, a grade-point average of 3.5 on a 5-point scale must be earned in the coursework considered for admission to the college. Students who have completed fewer than 60 college semester units of credit must meet the grade-point average criteria for first-time freshmen and must also have earned a 3.5 grade-point average on all this past college work attempted. Students who have completed 60 or more semester college units are eligible if a grade-point average of 3.5 is earned in all college work completed.

Undergraduate Entrance Testing Requirements

All undergraduate students, who have completed fewer than 60 semester or 90 quarter units of college work, are required to submit scores from either one of two national testing programs before eligibility for admission to the college can be determined. This requirement does not affect undergraduate students who have previously attended California State College at Fullerton and who have submitted ACT or SAT scores at the time of their first admission.

Tests will be administered at established test centers. Dates that tests are given and location of established test centers may be obtained from high school and junior college counseling offices, the Testing Office at this college (Room 264, Letters and Science Building), or by writing to the testing services. The addresses of the testing services are:

American College Testing Program, P.O. Box 21-4127, Sacramento 95821
College Entrance Examination Board, Box 1025, Berkeley 94701

To take one of these tests:

1. Obtain a registration form and a *Student Information Bulletin* from your high school or junior college counselor, from one of the addresses above, or from the College Testing Center (Room S-264). Select a test center near your home from the list printed in the *Bulletin*.
2. Send the completed registration form and the appropriate test fee to the proper address. Do not send to the Fullerton campus.
3. Have your ACT or SAT scores reported to the Testing Center, California State College at Fullerton. These scores should be received before the deadline for application. Use the appropriate code number for score reports.

If you have already taken either the ACT or SAT send \$1 to the appropriate testing agency and request that your scores be reported to the Testing Center. Use appropriate code number when requesting such reports, and provide complete information concerning testing date, test center, name and address changes, etc. These test scores when included on high school or college transcripts are not acceptable.

Evaluations

Health Requirements for Admission

Undergraduate and graduate students registering for more than six units of credit must, upon admission, submit completed health history and physical examination forms. In addition, evidence of a negative chest X-ray taken within 12 months before their registration must be presented. A tuberculin skin test may be obtained in lieu of an X-ray without cost at the Student Health Center. Evidence of a smallpox vaccination within the past five years is also required.

Undergraduate and graduate students registering for six units or less of credit in any one semester must comply with the following:

1. Filing a minimum informational form with the health center.
2. Presenting evidence of a negative chest X-ray or a negative tuberculin skin test, signed by a physician, nurse, or public health department official and dated not more than 12 months prior to the date of registration at California State College at Fullerton.
3. Evidence of a smallpox vaccination within the past five years.

All health requirements must be satisfactorily completed before the student will be allowed to pay his fees at registration. It is urged that the health clearance be obtained before the date of registration as this will conserve the student's registration time in considerable measure.

EVALUATIONS

Evaluation of Transfer Credits

The Office of Admissions will evaluate previous college work in terms of its relationship to the requirements of California State College at Fullerton. All degree and credential candidates will be issued a credit summary, usually during the first semester of attendance, which serves as a basis for determining specific remaining requirements for the student's specific objectives.

Once issued to a student, the evaluation remains valid as long as the student enrolls at the date specified, pursues the objective specified, and remains in continuous attendance. The student will not be held to additional graduation requirements unless such requirements become mandatory as a result of changes in the California Administrative Code or the California Education Code. If the student does not remain in continuous attendance and has not applied for and been granted a formal leave of absence, the evaluation issued upon readmission will specify the remaining requirements for the student's specific objectives.

In view of the foregoing regulations, the student should notify the Office of Admissions immediately if he changes the objective specified in his evaluation. While the evaluation for a student remains valid, the student is held responsible for complying with all changes in regulations and procedures which may appear in subsequent catalogs.

Acceptance of Credit

Credit for work completed at accredited institutions will be accepted toward the satisfaction of degree and credential requirements at the college within limitations of residence requirements, junior college transfer maximums, and course applicability.

General Policy

Transfer credit is not limited to those courses which precisely parallel the courses offered at the college. Credit is normally granted for all courses completed at other accredited institutions which reasonably correspond to one of the various curricula described in this catalog. Courses which do not appear to correspond

with offerings at the college are ordinarily not granted transfer credit. Courses in vocational or shop-type courses, and remedial courses are examples of courses not accepted for transfer credit. Students who have completed work at professional schools in the field of art or music or similar fields may expect a reduction in credit if the work completed carries a credit value in excess of that normally allowed for corresponding courses or areas at the college.

Transfer of Credit From a Junior College

Upper division credit is not allowed for courses taken in a junior college. Credential credit is not allowed for courses in professional education taken in a junior college. This does not invalidate credit for preprofessional courses taken at a junior college, such as introduction to education, art or design, arithmetic, or music for classroom teachers. After a student has completed 70 units of college credit, whether at a junior college or a four-year institution, or at both, no further junior college units will be accepted for unit credit.

Credit for Military Service

Students who have been in active military service for at least a year may be granted six units of undergraduate credit. Courses taken in service schools may be given credit on the basis of an evaluation which determines that they are of college level. Any credit for military experience will be given only upon request. Records verifying such experience must be filed with the Office of Admissions.

Credit for Extension and Correspondence Courses

The maximum amount of credit through correspondence and extension courses which may be allowed toward the bachelor's degree is 24 units, of which not more than 12 may be transferred from another college or university.

Credit by Advanced Placement

Students who have successfully completed courses in the advanced placement program (defined as receiving a score of 3, 4 or 5) shall be granted credit toward graduation, advanced placement in the college's sequence courses, and credit for curriculum requirements.

Credit by Examination

Students may be granted credit for a course toward graduation and to meet curriculum requirements by the satisfactory completion of a *challenge examination* in that course requirement. The examinations are to be comprehensive and administered by the department in which the course is offered. Well in advance of the *challenge examination* the student will secure written approval of his major adviser and the chairman of the department in which the course is offered. Upon the successful completion of the examination, the notation on the permanent record of the student will be made as "CR" for the course. "CR" is to indicate credit for the course with a passing grade. Upon failure of the examination, the notation on the permanent record of the student will be made as "No CR" for the course. Credit by examination may not be used to fulfill the minimum residence requirements. The *challenge examination* for any course may be attempted only once. A maximum of 30 credits can be earned by *challenge examination*, including those achieved by advanced placement.

REGISTRATION

Orientation

An orientation program for new students is conducted at the beginning of the registration period each semester. At this time, information relating to academic planning, student services and activities, and other aspects of college life as well as opportunities for student questions are provided.

Registration

Registration is the final step in enrollment. When a student has been admitted by the Office of Admissions, he should obtain a *Class Schedule* before the beginning of each term. The *Class Schedule* contains details regarding courses offered and the registration schedule. Students consult with their advisers during registration.

At registration, every student is required to file a program card with the Office of the Registrar. The filing of a program card by the student and its acceptance by the college obligates the student to perform the designated work to the best of his ability. All undergraduates are urged to declare a major at the earliest practicable time and not later than at the time they have completed 60 units of college work. Registration is not official until fees have been paid, and no student is allowed to attend classes until all steps in the registration process have been completed.

Late Registration

The last day to register late each semester will be announced in the *Class Schedule*. Late registrants will find themselves handicapped in arranging their programs and must pay a \$5 late registration fee in addition to regular fees.

Change of Program

Each student is responsible for the program of courses he selects and lists when he registers. Changes may not be made thereafter without the filing of a change of program form in the Office of the Registrar. All applications for courses dropped or added cost a \$1 change of program fee. No classes may be dropped during the last two weeks of instruction, although complete withdrawal from college is still possible.

Concurrent Enrollment

A student enrolled at the college may enroll concurrently for additional courses at another institution only with advance written approval from the student's academic adviser on official forms filed in the Office of the Registrar. Permission will not be granted when the study load in the proposed combined program exceeds the units authorized at this college.

Auditors

A properly qualified student may enroll in classes as an auditor. The student must meet the regular college admission requirements and must pay the same fees as other students. An auditor may not change his registration to obtain credit after the last date to add courses to the study list. An auditor is not permitted to take examinations in the course.

VETERANS

California State College at Fullerton is approved by the Bureau of Readjustment Education, State Department of Education, to offer programs to veterans seeking benefits under state and federal legislation. All students seeking veterans benefits must have a degree or credential objective.

Applications for benefits should be filed well in advance of the semester in which the veteran plans to use these benefits in order to have the authorization at the time of registration.

SELECTIVE SERVICE

Male students requiring certification of student status for selective service purposes may request the Office of Admissions and Records to submit SSS Forms 103, 109, or 109A, to their local boards. The college requires that undergraduate students register for and complete 12 units a semester to be considered full time for this purpose. Graduate students who register for and complete nine units of study may be considered full time provided at least three units are 500-level courses.

All students are advised that by enrolling each consecutive term at the minimal level to qualify for full-time certification they may not achieve the degree and credential programs within the time limit allowed by the Selective Service System.

FEES AND EXPENSES

Application fee (nonrefundable) \$5.00

Registration Fees

Regular students (more than 6 units)

Materials and service fee	\$45.00
Associated Students fee	9.00
College Union fee	6.00
Total per semester	\$60.00

Limited students (1-6 units)

Materials and service fee	\$22.50
Associated Students fee	4.00
College Union fee	3.00
Total per semester	\$29.50

Music studio lesson fee

Per semester	\$70.00
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Summer Session fees

Per unit or fraction of unit	\$19.75
Associated Students fee	2.00
College Union fee	3.00

Extension fees

Per unit or fraction of unit	\$13.00-26.00
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Fees and Expenses

Other Fees or Charges

Nonresident tuition fee (in addition to fees required of resident students, except for enrollment in extension or summer session)

15 units or more per semester.....\$300.00*

Less than 15 units, per unit or fraction of unit.....20.00*

Nonresident foreign students (in addition to fees required of resident students)

15 units or more per semester.....\$127.50

Less than 15 units, per unit or fraction of unit.....8.50

Late registration fee (in addition to other fees listed above).....5.00

Check returned from bank for any cause.....2.00

Change of program fee.....1.00

Transcript fee (no charge for first copy).....1.00

Failure to meet administrative required appointment or time limit.....2.00

Auditors pay the same fees as others

Fees are subject to change by the Trustees of the California State Colleges

Refund of fees

Upon withdrawal from college, the materials and service fee may be refunded if written application for refund, on forms provided by the college, is submitted to the Registrar not later than 14 days following the day of the term that instruction begins; provided that the amount of \$2 shall be retained to cover the cost of registration. Late registration fees, change of program fees and application fees are not refundable.

The entire fee may be refunded if a student is unable to continue his registration because of a college regulation or because of compulsory military service. Application for refund under such circumstances may be made at any time before the date when the student receives any academic credit for the courses for which he is registered.

The difference between the applicable materials and service fee, less \$2, may be refunded if the unit load of the student is reduced to a lower materials and service fee category within the 14 days following the day of the term that instruction begins.

Parking fees

Per semester (nonreserved spaces):

Semester pass.....\$13.00

Coin-operated parking gate—per admission......25

Summer session

6-week period.....5.00

4-week period.....3.00

Typical Student Expenses

Although each student must determine his own budget in keeping with his individual needs and resources, the college does provide an estimate for what is considered one semester's minimum expenses for a single student. Not included are transportation costs, since distance from home varies with each student.

* Nonresident tuition fee subject to increase by an amount not yet determined, effective July 1, 1967.

Fees and Expenses

	<i>Students living in campus residence halls</i>	<i>Commuting students</i>
Materials and service fee *.....	\$45	\$45
Associated Students fee	9	9
Parking and health insurance fees.....	22	22
Room and board (17 meals per week).....	530	---
Books and supplies †	60	60
Clothing	50	50
Miscellaneous	100	100
College Union fee.....	6	6
	<hr/> \$822	<hr/> \$292

* Out-of-state students add \$300. Music students add \$70 for music lesson fee.
 † Art students should budget additional funds for supplies.

ACADEMIC ADVISEMENT

All undergraduate students working toward a degree or credential are assigned an adviser in the major field. Those seeking a credential will also be assigned a professional adviser in the School of Education.

Graduate students in all instructional areas except education will be assigned a major adviser. In education, all will have a professional adviser. Those students seeking a credential for teaching secondary schools will be assigned both a professional adviser and a major adviser.

Advisers are assigned by department chairmen. The adviser is basically a resource person who will help the student plan his academic program so that he meets the requirements of the major or credential objective in the most desirable manner. While the adviser can provide valuable information and suggestions to the student, the ultimate responsibility for the program the student plans and the courses he chooses lies with the student himself.

REGULATIONS

GENERAL REGULATIONS
GRADUATION REQUIREMENTS FOR
BACHELOR'S DEGREE
THE PROGRAM OF MASTER'S DEGREES

GENERAL REGULATIONS

ENROLLMENT DEFINITIONS AND REGULATIONS

Unit of Credit

Each college semester unit represents three hours of college work per week for one semester. Courses are of three types:

- (1) Lecture—one hour in class plus two hours of study.
- (2) Activity—two hours of class plus one hour of study.
- (3) Laboratory—three hours in class.

Some courses may combine two or more of these types.

Classification in College

Undergraduate students who have completed 0-29½ semester units of work are classified as freshmen, 30-59½ semester units as sophomores, 60-89½ semester units as juniors, and 90 or more as seniors.

Study List Limits

A student is normally permitted to enroll in a maximum of 16 units each semester (engineering students are excepted), with 12 units considered the *minimum* full-time load. However, upon written approval of his adviser, the student may carry additional units. The foregoing limits apply to students who are attending college on a full-time basis. Students with outside responsibilities are strongly advised to reduce their program of study.

Undergraduate Students Taking Graduate Level Courses

Graduate level (500) courses are organized primarily for graduate students. Undergraduate students may be permitted to enroll in a graduate level (500) course if:

- (a) They are within 9 units of completion of graduation requirements, or
- (b) They are exceptionally qualified seniors whose undergraduate work in the related field or fields has been of 3.5 grade-point average or better, and whose cumulative overall grade-point average is at least 3.25.

Such cases shall require specific approval by the chairman of the department in which the course is offered and by the chairman of the student's major department.

Graduate level (500) courses taken under (a) above may be applied to a graduate program.

Graduate level (500) courses taken under (b) above may be applied to the undergraduate program only.

GRADING PRACTICES

Grading System

Satisfactory grade	Grade-point value
A	4
B	3
C	2
Cr	None assigned
Unsatisfactory grade	
D	1
F	0

Transcripts

<i>Special grade</i>	<i>Grade-point value</i>
E (Incomplete)	0
AU (Auditor) (no credit toward degree or credential)	None assigned
W (Passing withdrawal)	None assigned

With the exception of the grades of E, AU, W, and Cr, all units attempted are computed in the student's grade-point average.

Incomplete Work

A grade of E may be given only when, in the opinion of the instructor, a student cannot complete a course during the semester of enrollment *for reasons beyond his control*. Such reasons are assumed to include: illness of the student, or of members of his immediate family, extraordinary financial problems, loss of outside position, and other such exigencies. In assigning a grade of E, the instructor will file with his department a statement of the specific requirements for completion of coursework. Such requirements will not include or necessitate retaking the course. This statement will also include a provisional grade indicating the quality of work completed at that time, and the instructor's designation of the time limit allowed for completion of course requirements. Upon later completion of the course requirements, or upon expiration of the time limits for completion of course requirements, the instructor shall initiate a change to a grade of A, B, C, D, or F. Instructional departments will determine procedures for completion of course requirements and assigning grades for such completed course work, in those special circumstances where the instructor is no longer available.

Grade Reports to Students

A report of the final grades assigned in classes is sent to each student at the end of each semester.

Student Writing

Students will be required to demonstrate, in all classes where written expression is appropriate, their ability to write clearly and correctly about the materials of the course. Ability of a student to demonstrate writing proficiency shall be used as a part of the final grade determination in any course.

Examinations

Final examinations are required in all courses and are given at times scheduled by the college. No examination may be scheduled for a class at another time unless approved by the dean of the school. No makeup final examination will be given except for reason of illness or other verified emergencies.

Repetition of Courses

When a course is repeated, the units and grade points of the repetition are included in the grade-point average in addition to the units and grade points of the original course. When a course is repeated, where the original grade was passing, the repetition will carry no subject or unit credit toward a degree or credential. Grade point deficiencies incurred in courses completed at California State College at Fullerton may not be made up by courses taken at other colleges.

TRANSCRIPTS

Upon request to the Office of the Registrar, each student will be provided with one official copy of his college record without charge. A charge of \$1 will be made for each additional transcript requested by the student. No transcript will be supplied for college work taken in other institutions.

CONTINUOUS RESIDENCY REGULATIONS

Good Standing

"Good standing" indicates that a student is eligible to continue or to return, and is free from financial obligation to the college and from disciplinary action. A student under academic or disciplinary disqualification is not eligible to receive a statement of "good standing" on transcripts issued by the college.

Election of Regulations

A student remaining in continuous attendance in regular sessions and continuing on the same curriculum in a state college may, for purposes of meeting graduation requirements, elect to meet the graduation requirements in effect either at the time of his entering the curriculum or at the time of his graduation therefrom, except that substitutions for discontinued courses may be authorized or required by the proper college authorities.

Leave of Absence

A student may petition for a leave of absence and if approved may upon his return continue under the catalog requirements that applied to his enrollment prior to the absence. Except in the case of required military service a leave of absence may be granted for a maximum of one year. Illness and compulsory military service are the only routinely approved reasons for a leave of absence.

Policy on Grades for Withdrawal

Withdrawal from, or neglect of, any course entered in the program card, or a change of program (including a change of section of the same course) without the formal permission of the Office of the Registrar, may result in a grade of F.

Through the sixth week of instruction in the semester, the grade for formal dropping of a class will be an automatic W. Beginning with the seventh week, students are expected to complete all courses. However, if the student must drop a course, because of ill health or other unforeseen problems beyond his control prohibiting his normal attention to the course, he may do so and receive a W if (a) he is doing satisfactory work in the course and (b) he has the written approval of the instructor in the course, and (c) he formally drops the class in the Office of the Registrar.

No classes may be dropped during the last two weeks of instruction, although complete withdrawal from college will still be possible.

Complete withdrawal from the college follows the above regulations except that written approval of the instructor is not required.

If, because of unusual circumstances, the student does not comply with the above regulations, he may receive a grade of W, if he was doing satisfactory work when he ceased attending class, by one of the following procedures:

- (a) By the initiation by the instructor of the class of a withdrawal;
- (b) By initiation by the student of a petition for withdrawal with the written permission of the instructor.

Complete Withdrawal From College

Students who wish to withdraw from the college must complete a withdrawal-from-college card. See section on refund of fees for possible refunds. No student may withdraw after the date shown on the college calendar as the last day of instruction.

Student Honors

STUDENT HONORS

Dean's List

Academic achievement is recognized with the publication each semester of a list of students whose grade-point average for the previous term has been 3.5 or better. Students are notified in writing by the dean of students when they have earned this distinction. Eligibility is based on a minimum of 12 units of course work.

Honors at Graduation

Honors at graduation have been defined by the Faculty Council in three classifications:

With honors	GPA 3.5
With high honors.....	GPA 3.85
With highest honors.....	GPA 4.0

STUDENT DISCIPLINE

Academic Probation

Academic probation serves to identify and to bring to the attention of appropriate college authorities a student who is experiencing academic difficulties.

A student shall be placed upon academic probation if either his cumulative grade-point average or his grade-point average at California State College at Fullerton falls below 2.0 (grade of C on five-point scale). The student shall be advised of probation status promptly and, except in unusual instances, before the end of the first week of instruction of the next consecutive enrollment period.

A student shall be removed from the probation list and restored to good standing when he earns a cumulative grade-point average of 2.0 (C) in all academic work attempted, and in all such work attempted at California State College at Fullerton.

Academic Disqualification

A student on academic probation shall be subject to academic disqualification if:

1. As a lower division student (fewer than 60 semester hours of college work completed) he falls 15 or more grade points below a 2.0 (C) average on all college units attempted or in all units attempted at this college.
2. As a junior (60 to 89½ semester hours of college work completed) he falls 9 or more grade points below a 2.0 (C) average on all college units attempted or in all units attempted at this college.
3. As a senior (90 or more semester hours of college work completed) he falls 6 or more grade points below a 2.0 (C) average on all college units attempted or in all units attempted at this college.

A graduate student (unclassified or classified) shall be disqualified if he falls below a 2.0 (C) average in all units attempted at this college as a graduate student.

Student Conduct

The college properly assumes that all students are in attendance to secure a sound education and that they will conduct themselves as mature citizens of the campus community. Compliance with not only the common law but with all regulations of the college is therefore expected. If, however, on any occasion a student or an organization is known to have compromised accepted standards of conduct and good taste, appropriate disciplinary action must be taken by authorities of the college. Conduct which is prejudicial to the good name of the institution by any student or student group will not under any circumstances be tolerated or overlooked. Every effort will be made to encourage and support the development of

self-discipline and control by students and student organizations. The dean of students, aided by all members of the faculty and advised by the Student Affairs Committee of the faculty, is responsible to the President of the College for the behavior of students in their relationships to the college. The President in turn is responsible to the Chancellor and the Trustees of the California State Colleges who themselves are governed by specific laws of the State of California.

RIGHT OF PETITION

Students may petition for review of certain college academic regulations when unusual circumstances exist. In such instances, students are requested to file a petition on a form designated for this purpose in the Office of Admissions and Records. All petitions must first be reviewed and signed by the student's adviser. Action will then be taken on the petition and the student will be notified of this decision. A copy of the action will also be placed in the student's folder in the Office of the Registrar.

Students also have the right to appeal certain disciplinary actions taken by appropriate college authorities. Regulations governing original hearings and appeal rights and procedures have been carefully detailed to provide maximum protection to both the individual charged and the college community. Information about the operation of the judicial system involving student discipline may be obtained in the Office of the Dean of Students.

GRADUATION REQUIREMENTS FOR THE BACHELOR'S DEGREE

A student is eligible for graduation if he is in good standing and fulfills the following requirements:

1. General Education

To be eligible for the bachelor's degree from California State College at Fullerton, the candidate shall have completed a minimum of 50 semester units of general education including at least six units in upper division courses. The courses in general education shall be distributed in the following manner:

- | | <i>Units</i> |
|--|--------------|
| (a) Social sciences..... | 12 |
| The social sciences shall include required instruction in U.S. history (Hist 170A or Hist 170B), U.S. Constitution and California state and local government and American ideals (Pol Sci 100 or a combination of Pol Sci 101 and Pol Sci 311), and courses in anthropology, economics, geography, history, political science, sociology, and similar fields. Courses must be selected from three or more of these fields. | |
| (b) Natural sciences..... | 9 |
| The natural sciences shall include at least one course selected from the physical sciences and at least one from the biological sciences. The physical sciences include astronomy, chemistry, geology and physics. The biological sciences include biology, botany, physiology and zoology. | |
| (c) Humanities..... | 12 |
| The humanities shall include a year of instruction in college-level English composition and literature. The remaining units may be chosen from the following subject fields: comparative literature, communications, English, philosophy, and advanced courses in French, German, Spanish, or other foreign languages. | |
| (d) Fine and applied arts..... | 9 |
| The fine and applied arts shall include a course in oral communication. Additional courses shall be chosen from the following subject areas: art, drama and music. | |
| (e) Psychology..... | 3 |
| This should be the standard introductory course in psychology. | |
| (f) Economics or mathematics..... | 3 |
| Either a course in college mathematics which would have as its prerequisite a minimum of two years of high school mathematics or its equivalent, or a college-level introductory course in economics will meet this requirement. | |
| (g) Health and physical education..... | 2 |
| A minimum of two units required by completing four semesters of activity courses which include instruction in health education. Not more than one activity course within any one semester may be counted toward general education. Credit in intercollegiate athletics courses may meet not more than two semesters of the college general education requirement in physical education. Not more than six units of credit in physical education activities courses, including intercollegiate athletics, may be applied toward credit for graduation. (A student | |

Bachelor's Degree

under 25 years of age at the time of admission to the college is required to take all four semesters of the requirement.)

Units

Total..... 50

(The above requirements apply to all students who began college-level work in any institution in or after the fall semester of 1963. Students who began college-level work before the fall semester of 1963 must complete the general education requirements outlined in Title 5 of the California Administrative Code.)

All baccalaureate degree programs of the college will be expected to meet the college general education requirements. However, for certain degree programs, other than the bachelor of arts degree, where accreditation or certification may require a higher proportion of professional course work, the general education requirements as set forth by Title 5, California Administrative Code, may be substituted for the college general education requirements, after due consideration of the alternative possibility of expanding the required number of units in the particular degree program.

2. Units

(a) Total units

A minimum of 124 semester units is required for graduation with a bachelor of arts degree. The Bachelor of Science in Engineering requires a minimum of 136 semester units.

(b) Upper division units

Completion of a minimum of 40 units of upper division credit is required.

(c) Resident units

Completion of a minimum of 24 semester units in residence is required. At least one-half of these units must be completed among the last 20 semester units counted toward the degree. Extension credit, or credit by examination, may not be used to fulfill the minimum residence requirement.

3. Scholarship

(a) A grade-point average of 2.0 or better is required on all units attempted, including those accepted by transfer from another institution.

(b) A grade-point average of 2.0 or better is required on all units in the major.

(c) A grade-point average of 2.0 or better is required on all units attempted at California State College at Fullerton.

4. Major

Completion of all requirements for a major as specified by appropriate college authority is required.

5. Minor

Completion of a minor field is *not* required for the baccalaureate degree at this time.

6. Graduation Requirement Check

A candidate for graduation should file an application for a graduation requirement check in the Office of the Registrar by the end of the fifth week of the semester prior to the semester in which he expects to graduate. No graduation requirement check should be requested unless and until the senior has completed 100 semester hours and a substantial portion of his major requirements (including the current work in progress). If the candidate does not complete the requirements in the semester indicated, *he must request a second graduation check indicating the new date.*

7. Approval and Recommendation by the Faculty of the College

THE PROGRAM OF MASTER'S DEGREES

Master's degree programs offered at California State College at Fullerton are listed on page 77 and are described in the appropriate section of this catalog under "College Curricula." The programs also are described in the *Graduate Bulletin*, copies of which are available in the Office of Admissions and the Graduate Office.

Master's degrees in other areas are under consideration and will be announced when and if approved.

General Requirements for the Master's Degree

General requirements for the master's degree are 30 semester units of approved coursework completed with a 3.0 (B) minimum grade-point average and within seven years. Of the 30 units of approved coursework:

1. No less than 12 shall be in exclusively graduate (500-series) courses.
2. No more than a total of six shall be in extension and/or transfer credit.
3. Nor more than six shall be allowed for a thesis, though a thesis is optional in some programs.

Some type of final evaluation, near the end of the student's work toward his master's degree, is required. It may be a thesis, a project, a comprehensive examination, or any combination of these.

These requirements, except for that concerning "final evaluation," are drawn from the California Administrative Code and apply to all master's programs in all the California State Colleges. Each master's degree program has its own special requirements.

Steps in the Master's Degree Program

1. Admission to the College

Every student who wishes to begin work at California State College at Fullerton or to resume work after an interruption of one semester or more must apply for admission to the college. A student who begins graduate work not later than the semester succeeding the date of his graduation (baccalaureate) from CSCF need not apply for admission; he is a continuing student. The admission procedure is described elsewhere in this catalog.

Once a student who has a bachelor's degree is admitted to CSCF, he is automatically an unclassified graduate student. To become a classified student—that is, one who has been accepted into a master's degree program—he must undertake certain further steps and satisfy certain further requirements as listed below.

2. Declaration of Objective

"Objective" is the particular master's program the student wishes to enter and within that program the particular concentration or emphasis, if any. A student may declare his objective by filling in the appropriate space on the application form for admission to the college. If he has not done so, or if he is a continuing student (or if he has changed his objective), he may declare his objective by filling out a change of objective card in the Graduate Office.

3. Securing Transcripts

Before a student's undergraduate preparation for a master's degree program can be evaluated, his adviser must have access to the transcripts of the student's previous academic work. It is the student's responsibility to write to all of the institutions of higher learning in which he has previously registered, requesting that

a transcript of his record at each institution be sent to the CSCF Office of Admissions and Records. These copies are over and above the transcript from the institution conferring the baccalaureate degree, required for admission to the college. A continuing student must request the Office of Admissions and Records to relay to the department of the degree program a transcript of his CSCF record.

4. Taking Tests

Every master's program requires the student to take certain tests—usually some part of the Graduate Record Examination—before he can be considered for classified status. (See program descriptions in this catalog for the types of tests required.) The GRE tests are nationally administered and are given only a few times a year on specified dates. They may be taken at CSCF—through the services of the Office of Counseling and Testing—on only certain dates during the year. Those dates may be ascertained at the Office of Counseling and Testing or departmental offices. The student must make written application for the tests on a form available at the above offices and he must do so not less than 15 days before the test is to be given. Since test results are measured against those of students who normally take the tests in their senior year and since they are required before the student can be admitted to a degree program (that is, become a classified student), the taking of the tests should not be deferred.

There is no arbitrary level above which scores on tests are satisfactory. In making their decisions on a student's eligibility for a master's degree program, departmental graduate committees consider a combination of factors including, besides test scores, the student's undergraduate record and his performance in such postgraduate courses as he may have taken.

Steps three and four should be taken as soon as possible and may be taken before the student registers for his first postgraduate courses. Unless he takes the steps, the student cannot be classified, and he can have no surety that the courses he takes before he is classified will be retroactively applied to his program for the master's degree.

5. Informal Advisement

This step is necessary only for students who wish to enroll in or who have enrolled in postgraduate courses before securing transcripts and taking required tests. It is accomplished by the student's making an appointment with a graduate adviser at the appropriate departmental office. The kind of counsel an adviser can give at this point is necessarily tentative and cannot be construed as establishing a contract between department and student. If the student brings his own copies of transcripts with him to the conference, his adviser can be more specific in his suggestions, but he can make no formal decisions on the basis of "hand-carried" transcripts.

6. Application for Classified Status

When the student has allowed sufficient time for his transcripts to arrive and no sooner than thirty days after taking his required tests, he should fill out an application for classified graduate status card in the Graduate Office and make an appointment through the appropriate departmental office with a graduate adviser. In the ensuing conference the first and, if feasible, both of the following processes will be accomplished.

a. Evaluation of the student's prerequisites and assignment of courses required, if any, to remove deficiencies.

Generally a student must have the equivalent of a CSCF undergraduate major in his intended field before he can be admitted to a master's degree program. Most departments also require a specified undergraduate grade-point average in either major or all course work. If the student lacks certain courses

Master's Degree

they will be listed on a form, a copy of which will be sent to the student. If the student's undergraduate GPA is below standard, he may be allowed to take certain courses, listed on the same form, in which he must earn a B average before his entering a master's program. Coursework undertaken to satisfy quantitative or qualitative deficiencies cannot be applied toward a master's degree. Provisions for the student's fulfilling certain other departmental requirements, if any, such as foreign language competence, will be made.

b. Drawing up a study plan of coursework and other requirements leading to the master's degree.

The student will work out with his adviser a study plan on which the courses or types of courses that he will take are listed. The student will be sent a copy of the approved study plan and copies will be filed in the Graduate Office and the department office.

The above processes may be accomplished in one meeting if the student need make up no deficiencies or if the amount of prerequisite work is so limited that it may be undertaken concurrently, and at the earliest opportunity, with work on the master's program. If his deficiencies are extensive but remediable he must remove them through successful completion of assigned coursework, after which, in another meeting, he may work out a study plan with his adviser. If his deficiencies, in test results as well as in quality of previous coursework, are such that he may be ineligible to enter a master's program, his case will be considered by an appropriate departmental committee and he will be notified of their decision.

After the above processes are completed a departmental committee will act on the student's request for classified status and forward their recommendation to the Dean of Graduate Studies, who gives final approval. The student will be notified through the Graduate Office of the committee's decision. *In no case will a student be recommended for classified status if his GPA in all the postgraduate coursework that he may have undertaken at CSCF is below 3.0.*

7. Advancement to Candidacy

Upon completion of 12 units of coursework on his master's degree study plan the student should apply for advancement to candidacy by filling out an advancement to candidacy card in the Graduate Office. A departmental committee will review the student's record and recommend to the Dean of Graduate Studies. The student will be notified whether his application has been approved, deferred, or denied. Bases for approval are a minimum grade point average of 3.0 in coursework on his study plan and satisfactory progress in such other requirements as the department may impose, such as thesis or project.

8. Successful Fulfillment of Study Plan Requirements

The student must complete the courses shown on his approved study plan on file in the Graduate Office and the department office (as described under No. 6) with at least a 3.0 GPA.

If a student wishes to make a change in his study plan he should file the appropriate form in the department of his major prior to registration. The form must be signed by his adviser. (Forms may be obtained in the Graduate Office and in the department offices.) No course may be removed from a study plan after the student has completed it.

If a student approaches the end of his master's career with less than a 3.0 average, he may request a change in his study plan, as above, to add no more than 6 units of coursework to his study plan to extend his chances of attaining a 3.0 average.

Graduate Policies and Procedures

If a student's average at any time falls below such a level that it cannot be raised to a 3.0 within the prescribed limits of coursework, he has in effect withdrawn himself from his master's program.

9. Final Steps

At the beginning of his last semester or session, the student must fill out a request for graduation check card at the Graduate Office. He must also have consulted with his adviser concerning the fulfillment of thesis and project requirements (if any) and make arrangements for taking his comprehensive examination. Upon the student's successful completion of all requirements the departmental committee and the Dean of Graduate Studies will recommend the awarding of the degree.

GRADUATE POLICIES AND PROCEDURES

Graduate Credit for Seniors

Students in the last semester of their senior year may petition on a form available in the Office of Admissions and Records to receive postgraduate credit for such current coursework as is not required for the bachelor's degree.

A senior may take a 500-series course if he is within nine units of completion of graduation requirements and with the specific approval of the chairman of the department in which the course is offered and by the chairman of the student's major department. If he is not within nine units of graduation, he may take a 500-series course only if in addition to the approval of appropriate chairmen he has a minimum overall GPA of 3.25 and of 3.5 in the field or fields of his intended graduate program. If he is not within nine units of graduation he may not get postgraduate credit for a 500-series course.

Inapplicable Courses

Courses numbered 100 to 299 cannot be credited toward a master's degree. Courses numbered 300 to 399 do not give graduate credit unless included on an approved graduate study plan.

Admission From Nonaccredited Schools

A student who is a graduate of a nonaccredited school must apply for admission as an undergraduate to complete requirements for a bachelor's degree from this institution. However, once admitted, a student in this category who gives evidence of unusual promise and superior background may petition the department concerned for reclassification as an unclassified graduate student, and if the petition is granted he may then proceed in the graduate program.

Waiver of Prerequisites

Graduate students of *unusual promise*, who have not met the normal master's degree undergraduate prerequisites in the designated major, may, under careful review and procedures, be admitted to master's degree programs, providing they demonstrate this unusual promise by substantial evidence that they are superior in background to those who normally qualify. Consult the Graduate Office for details.

Courses Over Seven Years Old

Students who desire to have courses over seven years old included in the 30 units of a study plan for the master's degree may petition to departmental graduate studies committees for a comprehensive examination in the relevant course or subject field.

Standards for Graduate Study

Graduate Assistantships

There are a limited number of appointments as graduate assistants available to outstanding graduate students who are working on graduate degree programs. These may pay up to \$1,100 per semester. If interested, consult the chairman of the department in which degree study is being taken.

Theses

When a thesis is required, the approved original copy must be taken to the Cashier's Office (S238) where arrangements will be made first to have the thesis sent to University Microfilms for microfilming and for the publication of the thesis abstract in *Master's Abstracts* and later to have the thesis bound. The fee for microfilming and publication of the abstract is \$18; the fee for binding is \$7.50. Both the bound copy and the microfilm will be deposited in the College Library, the first for circulation and the second for a permanent record.

Waiver of Nonresident Tuition Fee

Worthy graduate students who are not residents of California may, under certain circumstances, obtain a waiver of the nonresident tuition fee. Inquiries should be directed to the Admissions and Records Office or the financial aids officer.

Minimum Full-Time Load

Ordinarily, nine units of course work a semester shall constitute a minimum full-time program for graduate students, provided at least three units are in 500-level or higher courses.

Second Master's Degree

A graduate student desiring to work for a second master's degree from CSCF must request the department concerned and the Graduate Council for permission to enter a curriculum leading to the second master's degree. If the request is granted the student must as a minimum satisfy all prerequisites and all requirements of the new degree program. Approval of candidacy for the second degree will be given only after the first degree has been awarded.

International Study

The college participates in the California State Colleges' program of study abroad. Under this program, limited studies taken at designated foreign universities, when arranged in advance, may be applied toward the requirements of a degree awarded by CSCF. It is important that plans be completed several months before starting such a program. For details consult the foreign student adviser.

See general policies stated elsewhere, particularly "Leave of Absence," "Election of Regulations," "Concurrent Enrollment," "Incomplete Work," and "General Course Numbering Code."

Policies and procedures are subject to change, by proper college authority. Students should consult class schedules and other official announcements for possible revision of procedures stated herein.

STANDARDS FOR GRADUATE STUDY

Graduate study deals with more complex ideas and demands more sophisticated techniques, searching analysis, and creative thinking than undergraduate study. The research required is extensive in both primary and secondary sources and the quality of writing expected is high. Reading, writing, and thinking time for a graduate course is half again as much as for an undergraduate course. The student is advised, therefore, not to undertake more graduate work than he can do full justice to.

COLLEGE CURRICULA

COLLEGE CURRICULA

California State College at Fullerton offers the following baccalaureate degree programs which are described on the pages listed:

	<i>Page</i>		<i>Page</i>
B.A. Anthropology	81	B.A. German	100
B.A. Art	82	B.A. History	103
B.A. Biological science	86	B.A. Linguistics	105
B.A. Business administration	130	B.A. Mathematics	106
B.A. Chemistry	89	B.A. Music	109, 111
B.A. Communication	92	B.A. Philosophy	114
B.A. Comparative literature	94	B.S. Physical education	154
B.A. Drama	96	B.A. Physics	115
B.A. Economics	135	B.A. Political science	117
B.S. Engineering	159	B.A. Psychology	119
B.A. English	98	B.A. Sociology	122
B.A. French	100	B.A. Spanish	100
B.A. Geography	102	B.A. Speech	124

The following master's degree programs are offered:

	<i>Page</i>		<i>Page</i>
M.A. Art	84	M.A. English	99
M.A. Biology	88	M.A. Foreign languages	101
M.B.A. Business administration	132	M.A. History	104
M.A. Drama	97	M.A. Music	113
M.A. Economics	136	M.A. Political science	118
M.S. Education (with emphasis in school administration or school counseling)	153	M.A. Psychology	120
M.S. Engineering	163	M.A. Social sciences	121
		M.A. Sociology	123
		M.A. Speech	126

The college is accredited by the California State Board of Education for programs leading to the following credentials:

1. Standard teaching credential with specialization in elementary school teaching.
2. Standard teaching credential with specialization in secondary school teaching.
3. Standard teaching credential with specialization in junior college teaching.
4. Standard teaching credential with specialization, in lieu of minor, in the teaching of exceptional children in the area of mentally retarded children.
5. Standard teaching credential with specialization, in lieu of minor, in the teaching of exceptional children in the area of speech and hearing handicapped children.
6. Standard designated services credential with a specialization in pupil personnel services.
7. Standard supervision credential.

SCHOOL OF
LETTERS, ARTS AND SCIENCE

DEPARTMENT OF ANTHROPOLOGY

LETTERS, ARTS,
AND SCIENCE

SCHOOL OF LETTERS, ARTS AND SCIENCE

Dean: Miles D. McCarthy

DEPARTMENT OF ANTHROPOLOGY

Professor: Untereiner (chairman)

Assistant Professors: Christensen, Joesink-Mandeville, Leder, See

BACHELOR OF ARTS IN ANTHROPOLOGY

The major in anthropology is designed for students desiring a broad generalist background, students preparing to become teachers of social sciences, and students preparing for graduate work in anthropology and in advanced areal and international specializations.

Unit Requirements

The required minimum for the major is 45 units, in addition to those taken for the general education requirement, distributed as follows:

Courses in Anthropology

Thirty-three units must be taken in anthropology, 24 in upper division courses. Anthropology 201, 202, 203, 301, 401, 410 and 480 are required. Two courses are required from areal offerings in the field: Anthropology 321, 325, 328, 340, 345, 347, 350, and 360. Two courses are required from theoretical/institutional courses in the field: Anthropology 406, 411, 413, 415, 421, 423, 425, 428, 430, 450, and 460.

Minimum units 33

Related Courses

Twelve upper division units are to be taken in the related social science fields of economics, geography, history, political science, sociology, and psychology, to be approved by the major adviser. Advanced work in biological science, the fine and applied arts, and the humanities may be substituted for these units by students with specialized interests with the approval of their advisers. Students interested in specializing in anthropological linguistics are urged to take courses from the college's interdisciplinary program in linguistics. Students interested in specializing in physical anthropology are urged to take some of the following Biological Science courses: 161 Principles of Zoology; 312 Genetics; 361 Mammalian Anatomy and Physiology; 424 Evolution; 463 Comparative Vertebrate Anatomy; 465 Animal Ecology; and 471 Natural History of the Vertebrates. Students interested in specializing in primitive art are urged to take many of these Art courses: 411 Oceanic Art; 412 Art of Non-European Africa; 413 Art of North American Indians; 414 Art of Mesoamerica; 415 Art of Central and South America.

Minimum units 12

Minimum total units for the major 45

Students considering advanced professional careers in research, teaching, or applications of anthropology are urged to explore and sample widely from course offerings in the other social sciences, the biological and natural sciences and the humanities and arts. Through a judicious selection of these courses it is hoped that Anthropology majors will broaden their interests and diversify and develop their skills in working towards a variety of individualized career objectives.

Art

Teaching Minor in Anthropology

The minor in anthropology is intended as a second field for persons completing a major in another discipline in preparation for a teaching credential. Twenty-one units must be taken in anthropology; 15 of these in upper division courses. Anthropology 201 or 203 and 202 and 301 are required. Two additional courses must be selected from areal offerings in the field. Anthropology 321, 325, 328, 340, 345, 347, 350, and 360. Another course must be selected from theoretical/institutional courses in the field: Anthropology 406, 410, 411, 413, 415, 421, 423, 425, 428, 430, 450, and 460. A final course must be either Anthropology 401 or 480.

Graduate Work in Anthropology

The Anthropology Department is offering its first graduate courses this year. Anthropology now becomes eligible as one of the fields in the Master of Arts in Social Sciences.

DEPARTMENT OF ART

Professor: Dietz, Hein, Ivy (Chairman), Olsen, Partin

Associate Professor: Samuelson, V. Smith

Assistant Professor: Evjenth, Gleeson, Jeffries, Kerciu, McSherry, Wu

Instructor: Jordan, Sullivan

The Department of Art offers a program which includes the several fields of art history, theory, and appreciation, the fine arts (drawing, painting, and sculpture), the applied arts (general and specialized design and crafts), and art education. The broadest objective of the program is to contribute to the intellectual, social, and creative development of the learner as he prepares himself for citizenship in a democratic society. More specifically, the art program provides opportunities for students: (1) to develop a knowledge and understanding of those general principles of visual organization and expression basic to all forms and fields of art; (2) to develop a critical appreciation and understanding of historical and contemporary art forms through a study of these principles as they relate to the range of artistic production of mankind; (3) to use these general principles as a means to express more clearly their ideas, thoughts, and feelings in the creation of visual forms; (4) to develop those understandings and skills needed to pursue graduate studies in the field, to teach art in the schools, or to qualify for a position in business and industry as an art specialist.

Undergraduate curricula leading to the bachelor of arts degree have been designed to meet the specialized needs of the following groups: (1) students who wish to study art as an essential part of their personal and cultural development; (2) students seeking vocational competence in art; (3) students planning to teach art at the secondary level who wish either a teaching major or minor in art; and (4) students planning to teach in the elementary schools who wish to have art as either an academic major or minor.

To qualify for a baccalaureate degree with a major in art, students must have a C average in all courses required for the degree. No credit toward the major will be allowed for specific major courses in which a grade of D is obtained. As is customary, the Art Department reserves the right to hold projects completed by a student for class credit for a period of three years.

MAJOR IN ART FOR THE BACHELOR OF ARTS DEGREE

Five course programs have been planned to meet the individual needs and interests of students working for the bachelor of arts degree with a major in art.

In the development of specific course offerings which make up these programs, it has been the concern of the art faculty to see that each program contains: (1) basic courses in art history, theory, appreciation, and studio practice which have as their primary focus the study of those general principles of visual organization and expression underlying all fields of art; (2) more specialized courses which provide for adequate preparation in depth in a single field of art. The teaching of art history, theory, and criticism is not confined to courses bearing that title. Rather, each studio course involves theory as well as the practice of art, includes as part of its content the study and reference to related historical art forms, and has as part of its purpose the development of those critical abilities which are necessary to a valid evaluation and appreciation of the art expressions of man.

Plan I provides for an emphasis in the area of art history, theory, and appreciation and is particularly recommended for those students who wish to pursue graduate studies in art history or museology.

Plan II is designed for those students who prefer a studio-type program with an area of specialization selected from the following: (1) design; (2) crafts; (3) drawing and painting, or (4) sculpture.

Plan III is for those students who wish to meet the requirements of the standard teaching credential with specialization in secondary teaching.

Plan IV is for those students who wish to meet the requirements of the standard teaching credential with specialization in elementary teaching.

Plan V is for those students who wish to meet the requirements for teaching in junior college.

All five plans require a minimum of 48 units in art or approved related courses with a minimum of 24 units of upper division in art except for Plan IV which requires a minimum of 36 units of art including a minimum of 24 units of upper division in art.

In addition to the requirements listed below for the major, students must meet the other college requirements for a bachelor of arts degree (see page 69). Students following Plans III and IV also must meet any specific requirements for the desired teaching credential (see section in catalog for School of Education). Graduate students who plan to meet the requirement for a standard teaching credential with specialization in secondary school teaching with a major in art must complete six units in art as approved by the major adviser on and beyond the specific course requirements listed in Plan III before they can be recommended by the Art Department for student teaching.

Students following Plan III divide their student teaching between two semesters and register for three units of credit each semester. (See prerequisites and course description for Art Education 749.)

PLAN I: ART HISTORY AND APPRECIATION EMPHASIS

	Units
<i>Lower Division:</i> Art history and appreciation (9 units); art structure (3 units); approved electives (12 units) in: art, anthropology, drama, foreign languages, history, literature, music or philosophy	24
<i>Upper Division:</i> Art history and appreciation (24 units), including a minimum of 3 units in special studies and coverage of four of the following fields: primitive, classical, medieval, renaissance, baroque, modern, Oriental, American	24
Reading knowledge of one modern foreign language	
Comprehensive examination in art history	

Art

PLAN II: STUDIO EMPHASIS

<i>Lower Division:</i> Art history and appreciation (9 units); drawing and painting including life drawing (9 units); design and crafts (6 units)	24
<i>Upper Division:</i> Art history and appreciation (6 units); area of specialization (12 units); art electives (6 units)	24

PLAN III: TEACHING EMPHASIS

(Secondary)

<i>Lower Division:</i> Art history and appreciation: Art 201A, B (6 units); Art 111 (3 units); drawing and painting: Art 107A, B (6 units); Art 117 A, B, C* (3 units); design: Art 103, 104 (6 units); crafts: 106A (3 units); required elective: Communications 218A, Introduction to Photography (2 units)	24
<i>Upper Division:</i> Art History and appreciation: Art 401, 402 or 312 (3 units); drawing and painting: Art 307A (3 units); design Art 313A, 323A and 453A (8 units); sculpture: Art 316A (3 units); crafts: Art 305A (3 units); upper division art electives (4 units)	24

PLAN IV: Teaching Emphasis

(Elementary)

<i>Lower Division:</i> Basic course in art history and appreciation, drawing and painting including life drawing (1 unit), design and crafts	12
<i>Upper Division:</i> Art history and appreciation (6 units); drawing and painting (3 units); design (3 units); crafts (3 units); electives (9 units)	24

PLAN V: TEACHING EMPHASIS

(Junior College)

Lower Division: Same as Plan II.

Upper Division: Same as Plan II.

See Junior College Teacher Education Program page 146.

MINOR IN ART FOR THE BACHELOR OF ARTS DEGREE

A minimum of 24 units is required for a minor in art for the bachelor of arts degree of which a minimum of 10 units must be in upper division courses. Included in the program must be a basic course in each of the following areas: (1) art history and appreciation; (2) design; (3) drawing and painting; and (4) crafts. Those students planning to qualify for a standard teaching credential with specialization in elementary or secondary teaching and art for a minor must obtain approval from the Art Department for the courses selected to meet the upper division requirements for a minor in art.

MASTER OF ARTS DEGREE IN ART

The program of studies leading to the master of arts degree in art provides a balance of theory and practice for those who desire to teach art or wish to develop a sound basis for continued advanced work in this field. The program offers each student the opportunity to expand his intellectual and technical resources and to acquire greater richness and depth in terms of creative understanding and achievement in one of the following areas of concentration: (1) art history and appreciation; (2) drawing and painting; (3) crafts; (4) design; and (5) sculpture.

* Art 319 (3 units) may be substituted for Art 117 A, B, C.

Prerequisites for the Program

- Prerequisites to the program include:
- (1) an undergraduate major in art or 24 units of upper division art including at least 12 units of upper division study in the elected area of concentration with a GPA of 3.0 or better;
 - (2) a committee evaluation of the student's background and record in art, including the presentation of a portfolio of representative work by the student;
 - (3) completion not later than the first semester of the aptitude test of the Graduate Record Examination

Program of Studies

The degree program requires 30 units of graduate study approved by the student's graduate committee of which 15 must be 500 level courses. The 30 units are distributed as follows:

	Units
1. 500 level courses in art	15-21
A. Core courses in art, history, philosophy, analysis and criticism	9
(1) Art 500: Graduate Seminar in Art (3 units)	
(2) Art 501: Graduate Seminar in Art History and Appreciation (6 units)	
(On the recommendation of the adviser, the student may substitute 3 units in Philosophy 311, Philosophy of Art, or a 400 number art history course as partial fulfillment of this requirement.)	
B. Course work in the area of concentration selected from one of the following areas	6
(1) Art history and appreciation	
(2) Drawing and painting	
(3) Crafts	
(4) Design	
(5) Sculpture	
C. Project or thesis	3-6
2. Additional courses	9-12
A. 500- and/or 400-level courses in art to extend the student's field in depth	3-6
B. 500-, 400- and/or 300-level courses either in courses outside the art department related to the student's special area of interest or in courses within the art department outside the area of concentration to expand the student's field in breadth	6
Total	30

All courses must be completed with a B average, and all courses in the area of concentration must be graded B or better.

Also see "Steps in the Master's Degree Program," page 70.

Biological Science

DEPARTMENT OF BIOLOGICAL SCIENCE

Professors: McCarthy,* McCleary, Sutton (chairman)

Associate Professors: P. Adams, Barish, Bradshaw, Brattstrom, Rothman

Assistant Professors: Greenfield, McClanahan, Wagner, Walkington

The Department of Biology offers a program leading to the bachelor of arts degree in biology for students preparing to enter graduate and professional schools, for those preparing to teach, and for those preparing for careers in industry and government service.

It is the conviction of the faculty in biology that the purposes of all these students can best be served by building their curricula on a core of courses fundamental to the science of biology. This core curriculum includes biological principles, genetics, microbiology, and physiology.

In considering the curricula beyond this core of subjects, the faculty in biology has agreed that the interests and goals of individual students can best be satisfied through individual counseling rather than through prescribed programs. After discussion with their advisers, students will elect those upper division courses which will satisfy their individual interests and professional goals. Eight units of electives must be in one area of interest (e.g., biology, botany, microbiology, or zoology) and four units in another area.

To qualify for a baccalaureate degree in biological sciences, students must have a C average in all courses required for the major including those in the related sciences. A proficiency in one modern foreign language (Russian, German, French, others by petition) is required. A reading comprehension of a second modern foreign language is strongly recommended for students planning graduate study leading to the Ph.D. degree. This requirement is normally met by completing three semesters of a college foreign language with a C grade or better or by taking a foreign language for two years in high school and one semester of intermediate language in college with a minimum of a C grade in the college course.

No credit toward the major will be allowed for specific major courses in which a grade D is obtained.

Advanced students will be permitted to enroll in Biological Science 499, Independent Study. All full-time upper division students are expected to attend the departmental seminars.

The Department of Biology also offers a curriculum for students majoring in other fields who wish to minor in biology.

BACHELOR OF ARTS DEGREE IN BIOLOGICAL SCIENCE

One hundred twenty-four units including general education § (see page 69), foreign language, 37 units in biology courses, and supporting courses in physical sciences and mathematics. The supporting courses must include one year of inorganic college chemistry including qualitative analysis with laboratory, one semester of organic chemistry with laboratory, one semester of college mathematics, and one year of college physics with laboratory.†

* College administrative officer.

§ Transfer students should have completed as many of the general education courses as possible before admission. However, uncompleted units may be satisfied while the upper division work is in progress by concurrent enrollment at a junior college or with appropriate courses offered at the college.

† Those students seeking careers in biology at the Ph.D. level and careers in medicine should take a full year of organic chemistry, a year of analytical geometry and calculus, and quantitative chemistry with laboratory.

Biological Science

Minimum Course Requirements for the Major ‡

Lower Division

Biological Science	Units	
111 Principles of Biology.....	4	
141 Principles of Botany.....	4	
161 Principles of Zoology.....	4	
	—	
	12	12

Upper Division

Biological Science	Units	
311 Microbiology	4	
312 Genetics Lecture	3	
315 Molecular Biology	4	
Electives—14 units, of which 4 must be a course in Ecology and 4 must be outside area of emphasis.....	14	
	—	
	25	25
	—	
		37

SUGGESTED EIGHT-SEMESTER PROGRAM OF MAJOR IN BIOLOGICAL SCIENCE

Semester I

Units

Engl 101 Comp. and World Lit.	3
Bio Sci 101 or 111 Prin. Biology	4-5
Chem 101A Gen. Chemistry.....	5
Lang 203 or Hist 170A	
U.S. History	3
	—
	15-16

Semester III

Units

Physics 221A or Physics 211A.....	4-5
Bio Sci 161 Prin. Zoology.....	4
Pol Sci 100 or other General Education Course	3
Math 150B or elective.....	4
	—
	15-16

Semester V

Units

Bio Sci 311 Gen. Microbiology....	4
Chem 301A, 302A Organic Chem.	4
Bio Sci—upper div. elective.....	4
General education	3
	—
	15

Semester VII

Units

Bio Sci—upper div. electives.....	8
For Lang or electives.....	5
General education	3
	—
	16

Semester II

Units

Engl 102 World Lit. and Comp.	3
Bio Sci 141 Prin. Botany.....	4
Math 150A, or Math 120.....	3-4
Chem 101B Gen. Chemistry.....	5
	—
	15-16

Semester IV

Units

Physics 221B or Physics 211B.....	4-5
Bio Sci 315 Molecular Biol.....	4
Bio Sci 312-312L Genetics.....	4
General Education	3
	—
	15-16

Semester VI

Units

Chem 301B, 302B Organic Chem.	4
For Lang or electives.....	5
Psych 101 Introd. Psych.....	3
General education	3
	—
	15

Semester VIII

Units

Bio Sci—upper div. elective.....	2
For Lang or electives.....	3
Electives	5
General education	6
	—
	16

‡ Substitutions in the program may be made for transfer students and others upon the recommendation of the adviser and the approval of the department chairman.

Biological Science

Four $\frac{1}{2}$ -unit physical education courses are suggested during the first four semesters.

Minimum Requirements for Biological Science Minor †

	Units
Biological science	
101, 141, 161 Principles	13
424 Evolution <i>or</i>	
312 Genetics	3
311 General Microbiology	4
361 Mammalian Anatomy and Physiology <i>or</i>	
315 Molecular Biology <i>or</i>	
444 Plant Physiology	4
	<hr/> 24

MASTER OF ARTS IN BIOLOGY

General Characteristics

The program for this degree is based on the assumption that modern science necessitates broad preparation through the master's level of training. It permits breadth of preparation and at the same time concentration in an area such as botany, microbiology or zoology. In design it offers sufficient breadth and depth to strengthen the student's academic understanding and improve his competence for (a) advanced graduate work toward the doctoral degree in biological science, (b) teaching at all levels—elementary, secondary, and junior college, (c) technological work in the health sciences, (d) participating in research programs, (e) entering the field of public health service, and (f) participating in various field service and conservation positions with both the state and national governments.

Prerequisites

Prerequisite to entering the program is a pertinent undergraduate major in biology with a GPA of at least a 3.0. Satisfactory scores on the aptitude test of the Graduate Record Examination are also required. Students may be admitted provisionally with limited subject or grade deficiencies, but such deficiencies must be removed by completing additional courses, selected in conference with the adviser, with at least a B average.

Programs of Study—Thesis or Examination

A student who meets the prerequisites may apply for Classified Graduate status. He must file a program of study, either (1) a thesis study plan or (2) an examination study plan.

The thesis study plan must include 30 units of adviser-approved graduate work, at least 12 of which must be at the 500 level. The study plan may include six units of graduate level medical biology taken in an approved clinical laboratory school. All study plans must include Bio Sci 599 (Independent Graduate Research), and Bio Sci 598 (Thesis), and at least one departmental seminar. Twelve units must be distributed between *two* of the following areas: biology, botany, microbiology, or zoology. An added six units must be outside the two areas chosen. Further electives may be possible. Required is a thesis or a published paper, or a paper accepted for publication, acceptable to the adviser and committee, covering a field or laboratory research problem. A final oral examination on his research is also required.

The examination study plan for the degree must include 30 units of adviser-approved graduate work, at least 12 of which must be at the 500 level. All study plans must include between 3 and 6 units of Bio Sci 599 (Independent Graduate Research), and must include at least two department seminars. Twenty units

† Substitutions in the program may be made for transfer students and others upon the recommendation of the adviser and the approval of the department chairman.

must include coursework in the four areas of biology, botany, microbiology, and zoology. In addition a student must pass a written comprehensive examination, and an oral examination of from 1 to 3 hours.

For more detailed information or advisement, students should consult the chairman of the Biological Science Department, or the graduate coordinator of the Biological Science Department.

Also see "Steps in the Master's Degree Program," p. 70.

DEPARTMENT OF CHEMISTRY

Professor: Bryden

Associate Professors: Montana (chairman), Shields

Assistant Professors: Harris, Hiegel, Huotari, Langworthy, Pan, Prenzlow, Spenger

The curriculum is planned to provide thorough instruction in the basic principles and concepts of chemistry for students who will (1) advance to graduate work in chemistry; (2) teach in the science programs of secondary schools; (3) seek employment in industry or government; or (4) pursue a chemistry minor of fundamental courses in chemistry in support of other areas such as physics and biology.

To qualify for a baccalaureate degree in chemistry, students must have a C average in all courses required for the majors including those in the related sciences. A proficiency in one modern foreign language (Russian, German, French) is required. A reading comprehension of a second modern foreign language is strongly recommended for students planning graduate study leading to the PhD degree. This requirement is normally met by completing four semesters of a college foreign language with a C grade or better or by taking a foreign language for two years in high school and two semesters of intermediate language in college with a minimum of a C grade in the college course. Under unusual circumstances the requirement may be met by examination upon approval by the appropriate department chairman. Examinations will be given in October and March of each academic year. For details of examination procedure, apply at department office.

No credit toward the major will be allowed for specific major courses in which a grade D is obtained. A placement test will be given to students in the Department of Chemistry to determine whether they are ready to start Chemistry 101A.

BACHELOR OF ARTS IN CHEMISTRY

The Bachelor of Arts degree is granted under two plans: Plan A should be selected for those students planning a professional career in Chemistry (graduate work or chemical industry) and Plan B, for those students who are candidates for professional schools as medicine, dentistry, etc., or those planning careers in secondary education.

PLAN A

Required courses in Chemistry:

<i>Courses</i>	<i>Units</i>
Gen Chem (101A,B)	10
Quant Chem (312)	4
Org Chem (301A,B,303A,B)	10
Physical Chem (371A,B)	6
Phys Chem Lab (441)	3
Adv Inorg (425)	3
Indep. Study (499) <i>or</i>	
Senior Research (495)	2
Electives (at least one lecture	
or lecture lab course)	4
Total units	42

Chemistry

Related areas (*satisfies the general education requirement in physical science, mathematics and biology*):

Physics (221A,B,C)	13	
Mathematics (150A,B, 250A, 250B or 291)	14	
Biology	5	
Total Units	32	
Total units in Science and Mathematics		74
General Education units, not including 12 units of physical science, mathematics, and biology (see the general education requirements page 68)		38
Undesignated units		12
Total units for the B.A. degree in Chemistry (Plan A)		124

PLAN B

Required courses in Chemistry:

Courses	Units
Gen Chem (101A,B)	10
Quant Chem (312)	4
Org Chem (301A,B; 303A,B)	10
Phys Chem (371A,B)	6
Phys Chem Lab (441)	3
Adv Inorg (425)	3
Ind Study (499)	3
Senior Rsch (495)	2

Total units

38

Related areas (*satisfies the general education requirements in physical science, mathematics, and biology*):

Physics (211A,B) or (221A,B)	8-10	
Mathematics (150A,B, 250A)	11	
Biology	5	
Total units	24-26	
Total units in Science and Mathematics		62-64
General Education units, not including 12 units of physical science, mathematics, and biology (see the general education requirements page 68)		38
Undesignated units		24-22
Total units for the B.A. degree in Chemistry (Plan B)		124

MINOR IN CHEMISTRY

A minimum of 24 acceptable units of chemistry, including organic chemistry (8) and physical chemistry (6), are required for a chemistry minor.

Suggested Eight Semester Program for a Major in Chemistry (Plan A)

First Semester (Freshman)			Second Semester (Freshman)		
		Units			Units
Chem 101A	Gen. Chem.	5	Chem 101B	Gen. Chem.	5
Math 150A	Anal. Geo. and Calc.	4	Math 150B	Anal. Geo. and Calc.	4
Eng 101	Composition and Lit.	3	Phys 221A	Fundamental Physics	4
Hist 170A or 170B	U.S. History	3	Eng 102	Lit. and Composition	3
PE	Phys. ed. activity	$\frac{1}{2}$	PE	Phys. ed. activity	$\frac{1}{2}$
		15½			16½

Chemistry

	<i>Units</i>		<i>Units</i>
Third Semester (Sophomore)		Fourth Semester (Sophomore)	
Chem 301A Org. Chem.....	3	Chem 301B Org. Chem.	3
Chem 303A Org. Chem. Lab.....	2	Chem 303B Org. Chem. Lab.....	2
Math 250A Inter. Calc.	3	Math (250B or 291).....	3
Physics 221B Fundamental Physics	5	Physics 221C Fundamental Physics	3
Pol Sci 100 Amer. Government	3	PE Phys. ed. activity.....	½
PE Phys. ed. activity.....	½	Bio Sci	5
	16½		16½
Fifth Semester (Junior)		Sixth Semester (Junior)	
Chem 371A Physical Chem.	3	Chem 371B Physical Chem.	3
For Lang Mod. For. Lang.....	5	Elective in chemistry.....	2-4
General education courses	3	For Lang 102 Mod. For. Lang....	5
Chem 312 Quant. Chem.....	4	General education courses	5
	15		15-17
Seventh Semester (Senior)		Eighth Semester (Senior)	
Chem 441 Phys. Chem. Lab.....	3	Elective in chemistry.....	2-3
Chem (495 or 499).....	2-3	General education courses.....	13
Chem 425 Adv. Inorg.....	3		
For Lang 203 Inter. For. Lang..	3		
General education courses.....	4		
	15-16		15-16

This type of schedule allows the student to elect his last semesters according to the branch of chemistry which attracts him the most.

Below are listed the possible electives which would be available during the students last three semesters in residence.

Possible electives in the sixth semester:

- Chem 401 Org. Preps.
- Chem 403 Qual. Org.
- Chem 411 Instr. Anal.
- Chem 431 Adv. Org.

Possible electives during the eighth semester:

Same as those of the sixth semester plus

- Chem. 421 Inorg. Preps.
- Chem 451 Adv. P. Chem.
- Chem 461 Chem. Thermo.
- Chem 472 Chem. Cryst.
- Chem 475 Theo. Spec.

Suggested Program for a Major in Chemistry (Plan B)

This program is essentially the same as under Plan A except the number of required chemistry, mathematics and physics courses is reduced. A student planning on a career in teaching will, in addition, fulfill requirements of the School of Education.

Communications

DEPARTMENT OF COMMUNICATIONS

Professor: Maxwell (chairman)

Associate Professor: Alexander

Assistant Professors: Johnson, Smythe, Sommer

Instructor: Lawrence

The department offers a major in communication with emphases in advertising, news communication (journalism), photocommunication, public relations, technical communication, and telecommunication.

A master of arts in communication is planned, and the department is providing program advisement for those persons interested in beginning their work immediately toward the master's degree.

The communication major helps to prepare those desiring various careers related to mass communication—careers that may involve newspapers and magazines, television and radio, advertising, public relations, photography, industrial or governmental communications, and teaching. Also, because of the program's emphasis on general principles of communication, it can serve well those with aspirations for administrative work in many areas of business, industry, government and education. Additionally, communication courses will benefit those who wish a better understanding of the functions of the mass media in a democratic society.

BACHELOR OF ARTS DEGREE IN COMMUNICATION

Requirements: A combined total of 48 units—36 within the Communications Department and 12 collateral units* in other departments, as follows:

Communication Core: (21 units).

The courses in the core are required of all students majoring in communications.†

Communication 101	Reporting and Writing (3)
Communication 102	Reporting and Writing (3)
Communication 333	Mass Communication in Modern Society (3)
Communication 407	Communication and the Law (3)
Communication 425	History and Philosophy of American Mass Communication (3)
Communication 426	World Communication Systems (3)
Communication 427	Seminar on Current Issues in Mass Communication (3)

EMPHASIS FOR COMMUNICATION MAJORS

Every communication major must select an area of emphasis and complete the courses in it.

‡ Advertising	Units
Comm 353 Advertising Copy and Layout.....	3
Comm 356 Advertising Production (1,1).....	2
Comm 218A Introduction to Photography.....	2
Comm 354 Retail Advertising.....	3
Comm 439 Mass Media Internship.....	2
Comm 451 National Advertising Campaigns.....	3

* Some flexibility may be permitted in collateral units, depending on the student's preparation in these areas.

† Because of extensive need for mathematics and science in the technical communication emphasis, some variation will be permitted, through advisement only, to include additional mathematics and science in the program. Collateral units in other departments will exceed 12 for this emphasis, but total units required for the major will not exceed 48.

‡ This emphasis is still in its developmental stage. Other courses are being prepared for inclusion in it.

Communications

Collateral Requirements in Other Departments

Units

Art 103	Two-dimensional design	3
Eng 303	The Structure of Modern English	3
Mktg 351	Principles of Marketing	3
Phil 310	Ethics	3

* News Communication (Journalism)

Comm 338	Newspaper Production	3
Comm 332	Copy Editing and Makeup	3
Comm 335	Reporting of Public Affairs	3
Comm 218A	Introduction to Photography	2
Comm 218B	Communications Photography	2
Comm 439	Mass Media Internship	2

Collateral Requirements in Other Departments

Econ 403	Comparative Economic Systems	3
Eng 462	Modern British and American Novels	3
Hist 476	United States Since 1933	3
Psych 351	Social Psychology	3

* Photocommunication

Comm 218A	Introduction to Photography	2
Comm 218B	Communications Photography	2
Comm 375	The Documentary Film	3
Comm 358A,B	Publications Production (2,2)	4
Comm 338	Newspaper Production	3
Comm 439	Mass Media Internship	2

Collateral Requirements in Other Departments

Art 103	Two-dimensional Design	3
Art 111	Fundamentals of Art	3
Econ 201	The American Economy	3
Psych 351	Social Psychology	3

Public Relations

Comm 361	Theory and Practice of Public Relations	3
Comm 463	Public Relations Methods	3
Comm 465	International Public Relations	3
Comm 358	Publications Production	2
Comm 218A	Introduction to Photography	2
Comm 439	Mass Media Internship	2

Collateral Courses in Other Departments

Econ 403	Comparative Economic Systems	3
Eng 303	The Structure of Modern English	3
Mgmt 341	Principles of Management	3
Psych 351	Social Psychology	3

* Technical Communication

Comm 332	Copy Editing	3
Comm 334	Feature Article Writing	3
Comm 401	Reporting and Writing	3
Comm 403	Technical Writing	3

* This emphasis is still in its developmental stage. Other courses are being prepared for inclusion in it.

Communications

Collateral Requirements in Other Departments

	Units
Physics 211A Elementary Physics.....	4
Physics 211B Elementary Physics.....	4
QM 341 Business and Economic Statistics.....	3
QM 364 Computer Logic and Programming.....	3

* Telecommunication

Comm 380 Introduction to Radio and Television.....	3
Comm 371 Radio-television News and Public Affairs.....	3
Comm 375 The Documentary Film.....	3
Comm 218A Introduction to Photography.....	2
Comm 218B Communications Photography.....	2
Comm 439 Mass Media Internship.....	2

Collateral Courses in Other Departments

Drama 276A Beginning Stagecraft.....	2
Eng 303 The Structure of Modern English.....	3
Psych 351 Social Psychology.....	3
Spch 333 Business and Professional Speaking.....	3

MINOR IN COMMUNICATION

This minor offers a basic core of writing and publication courses for teacher candidates and others who wish some training in communications.

Requirements: A combined total of 21 units, as follows:

Lower division (maximum of 7)

Communication 101 or 102 (3)

Communication 218A and 218B (2, 2)

Upper division (minimum of 14 units)

† Communication 331 or equivalent (3)

Communication 333 (3)

Communication 338A (3)

Communication 358A or 358B (2)

Communication 425 (3)

TEACHER CREDENTIAL REQUIREMENTS

Communication majors who are teacher candidates should complete the communication core and the news communication (journalism) emphasis. They must complete Communication 358AB as part of their major requirements. These candidates must have their minor approved by the chairman of the Communications Department and must complete the required professional education courses in addition to their major and minor requirements. (See "Journalism Education," page 211.)

BACHELOR OF ARTS IN COMPARATIVE LITERATURE

(An Interdisciplinary Program)

The degree in comparative literature is an interdisciplinary program administered jointly by the Department of English and the Department of Foreign Languages and Literatures. The Committee on the Program in Comparative Literature is responsible for formulating the policies for the curriculum. The chairman of the

* This emphasis is still in its developmental stage. Other courses are being prepared for inclusion in it.

† Some variation in these requirements may be permitted on the basis of professional experience or interest.

English Department is chairman of the program. The major in comparative literature provides professional competence and personal enrichment for students with an exceptional concern and appreciation for the study of the interrelationships between the languages and literatures of various civilizations from the dawn of mankind to the present. The program offers courses in the study of literature with special emphasis on the global interrelatedness of literary form and content, theory and philosophy, genres and movements, providing an insight into the developments and backgrounds of mankind's worldwide cultures and literatures. The literary works are read in English or English translations and the courses conducted in English.

Upper Division Requirements

- (A) 15 units selected from courses listed under comparative literature.
- (B) 3 units of French, German, Italian, Russian, or Spanish selected from course numbers 431, 441, 451, 461, or any other 400 course approved by the adviser.
- (C) 6 units selected from courses listed under English and numbered 300 or above
- (D) 3 units of either History 415A or History 110A.
- (E) 9 units selected from any 300 or 400 literature course in comparative literature, English, French, German, Italian, Russian, or Spanish.

Total: 36 units.

Majors in comparative literature are strongly advised to include in their program courses in related areas, such as art, anthropology, drama, history, linguistics, philosophy.

Students must consult with an adviser in comparative literature through the Department of English or the Department of Foreign Languages and Literatures before submitting their individual courses of study for approval by the Committee on the Program in Comparative Literature.

DEPARTMENT OF DRAMA

Professor: Young (chairman)

Associate Professors: Brown, Duerr, Zeltzer

Assistant Professors: Forest, Henry, Keller

Instructor: McColgan

Lecturer: Kuni

The Department of Drama program includes the several fields of playwriting, oral interpretation, acting-directing, technical theatre, theatre history and theory, radio-television and dance. Specifically, the course work is arranged to provide opportunities for students (1) to develop an appreciation for the theatre; (2) to become aware, as audience or participants of the shaping force of the theatre in society; (3) to improve the understandings and skills necessary for work in the theatre as a profession; (4) to prepare for teaching theatre; and (5) to pursue graduate studies.

To qualify for the bachelor of arts degree with a major in drama, students must have a C average in all required courses. No credit towards the major will be given for such courses in which a grade of D is assigned. In addition to the course requirements, all students majoring in drama must participate in the casts or crews for a minimum of eight theater, dance, reader's theatre or television productions. The productions chosen for credit will be selected with the aid of the departmental adviser. Students are also expected to usher for at least two major productions per year.

Drama

MAJOR IN DRAMA FOR THE BACHELOR OF ARTS DEGREE

Four course programs have been planned to meet the individual needs and interests of students working for the bachelor of arts degree with a major in drama.

Plan I is for those who wish to study drama as a cultural contribution or who wish to pursue graduate degrees in drama with emphasis in theatre history and theory. It is strongly recommended that students electing this plan support the major with approved electives from art, drama, music, foreign languages, literature, philosophy, or speech.

Plan II is designed to develop the necessary competency for pursuing drama as a profession, or for pursuing graduate degrees in drama with an emphasis in an area of concentration other than history of the theatre. Areas of concentration are: playwriting; acting-directing; interpretation; radio-television, technical theatre and dance.

Plan III meets the requirements of the standard teaching credential with specialization in elementary teaching.

Plan IV meets the requirements of the standard teaching credential with specialization in secondary or junior college teaching. A minor is required and will be selected with the aid of the departmental adviser.

All four plans require a minimum of 36 units in drama with a minimum of 24 units of upper division in drama. The lower division requirements are the same for all four plans.

In addition to the requirements listed below for the major, students must meet the other college requirements for a bachelor of arts degree. Students following Plans III and IV also must meet any specific requirements for the desired teaching credential (see section in catalog for School of Education). Graduate students who plan to meet the requirements for a standard teaching credential with specialization in secondary teaching and a major in drama must complete or be enrolled in six units in drama as approved by the major adviser beyond the specific course requirements listed in Plan IV before they can be recommended by the Drama Department for student teaching.

PLAN I: THEATRE HISTORY AND THEORY EMPHASIS

Lower Division: Prerequisites for the major: Acting or stage movement, technical theatre, costume and makeup, oral interpretation.

Upper Division: Drama 470, Directing (3 units); Drama 473AB, World Drama (6 units); Drama 475AB, History of the Theatre (6 units); Drama 477, Contemporary Critical Techniques (3 units); electives, (6 units)..... 24

PLAN II: PROFESSIONAL EMPHASIS IN AN AREA OF CONCENTRATION

Lower Division: Same as in Plan I.

Upper Division: In one of the following areas of concentration:

Playwriting—Drama 364, Seminar in Playwriting, or Drama 383, Radio and TV Writing (3 units); Drama 378A or B, Experimental Theatre (3 units); Drama 370AB, Fundamentals of Directing (6 units); Drama 475AB, History of the Theatre (6 units); Drama 473AB, World Drama (6 units); Drama 477, Contemporary Critical Techniques (3 units)..... 27

Oral Interpretation—Drama 311, Oral Interpretation (3 units); Drama 314AB, Reading Theatre (6 units); Drama 473A, World Drama (3 units); Drama 475AB, History of the Theatre (6 units); electives (6 units in upper division drama courses.)..... 24

Acting-Directing—Drama 373AB, Advanced Acting (6 units); Drama 378AB, Experimental Theatre (6 units); Drama 470AB, Directing (6 units); Drama 475AB, History of the Theatre (6 units); Drama 374A, Dance (2 or 4), or Drama 376A, Stagecraft (2 or 4)..... 30

Technical Theatre —Drama 376AB, Advanced Stagecraft (4 units), Drama 377B, Stage Costuming (2 units); Drama 470A, Directing (3 units); Drama 475AB, History of the Theatre (6 units); Drama 378AB, Experimental Theatre (6 units); electives (3 units in upper division drama courses).....	24
Radio-Television —Drama 380, Introduction to Radio and Television (3 units); Drama 382, Television Techniques (3 units); Drama 383, Radio and Television Writing (3 units); Drama 470AB, Directing (6 units); Drama 475AB, History of the Theatre (6 units); Drama 376A, Stagecraft (2 units); Drama Educ. 484, Educational Television Production (3 units).....	26
Dance —Drama 374AB, Dance Theatre and Production (4 units); Drama 377B, Stage Costuming (2 units); Drama 474, Special Studies in Dance (2 units); Drama 475AB, World Drama (6 units); Drama 378A or B, Experimental Theatre, or Drama 470A, Directing (3 units); Drama 376A, Stagecraft (2 units); Drama 373A, Advanced Acting (3 units); Drama 473AB World Drama (6 units).....	28

PLAN III: TEACHING EMPHASIS
(Elementary)

Lower Division: Same as in Plan I.

<i>Upper Division:</i> History of the theatre (3 units); oral interpretation (3 units); dramatic activities for children (3 units); reading theatre (3 units); dance theatre (4 units); electives (8 units).....	24
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PLAN IV: TEACHING EMPHASIS
(Secondary or Junior College)

Lower Division: Same as in Plan I.

<i>Upper Division:</i> History of the theatre (6 units); acting-directing (6 units); technical theatre (6 units); electives (6 units).....	24
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MINOR IN DRAMA

The minor in drama consists of 24 units, 14 of which must be in upper division. Included in the program must be a course in each of the following areas: (1) oral interpretation; (2) stagecraft; (3) acting and/or stage movement; (4) history of the theatre, (5) directing. Candidates for the secondary teaching credential who wish to minor in drama must obtain approval from the Drama Department for the courses selected to meet the upper division requirements. Students minoring in drama must participate in the casts or crews for a minimum of four theatre, dance, reader's theatre or television production.

MASTER OF ARTS IN DRAMA

The master of arts degree in drama is designed to provide a program of coordinated graduate studies built on the framework of the undergraduate preparation; to provide added incentive for intellectual growth reflected in improvement in teaching and professional recognition; and to provide a sound basis for continued graduate study in the field of drama. The student is expected to demonstrate a high degree of intellectual and creative competence and to demonstrate mastery of his field of concentration in one of the areas of emphasis in drama; (1) theatre history, (2) dramatic literature and criticism, (3) acting and directing, (4) playwriting, (5) technical theatre, (6) oral interpretation, (7) radio and television, (8) dance.

Prerequisites

In addition to the college requirements, students admitted to this program must have earned 24 units of upper division units in drama. Students will complete an oral interview before being admitted to a program of studies.

English

Program of Studies

The degree study plan with concentration in drama will include at least 30 units of adviser-approved graduate studies, 15 units of which must be in 500-level courses. Each program will have at least 15 units in drama; a core of 12 units, to include Drama 500 (Introduction to Graduate Study—taken very early in the program), Drama 501 (Graduate Seminar: Advanced Theatre Theory and Appreciation), Drama 511 (Graduate Seminar in Interpretation), and Drama 597 or 598 (Project or Thesis), and six units of adviser-approved supporting courses in related fields in other departments. Before the degree is granted, each student will pass an oral and written comprehensive examination. Also see "Steps in the Master's Degree Program," page 70.

DEPARTMENT OF ENGLISH

Professors: Cummings,* Ramsay, Schneider, Watkin

Associate Professors: Abraham, Haaker, Herring, Jones, McNelly, Obler, Rubinstein, Salz, Wagner (chairman)

Assistant Professors: Austin, Callahan, Edwards, Epstein, Friend, Gilde, Greenwood, Hodges, Petalas, Scott, Scoufos, Seller, Sharma, Spangler, Sullivan, Tumas

Instructors: Hayden, Heinze, Kilker, Mauch, Oleyar, Shapiro

Lecturers: Farmer, Lynn

The study of English emphasizes the nature and development of our language, the craft of writing, and the imaginative literature of American and British authors—prose fiction, poetry, and drama. Except for the required freshman English offerings, courses in world literature in English translation are listed separately, under comparative literature. In addition, the Department of English offers some specialized professional courses. On the senior and graduate levels, various opportunities are provided for seminar work and independent study.

English 101 and 102 or their equivalents or the consent of the instructor is a prerequisite to all English and comparative literature courses numbered 200 and above.

BACHELOR OF ARTS DEGREE: ENGLISH MAJOR

Requirements: A total of 36 units beyond English 101 and 102 or their equivalents, with the following distribution:

Lower division (maximum of 9 units)

May include survey courses in British, American, or World Literature.

Students offering American Literature in the Lower Division must take at least nine units in courses in the periods of English literature preceding the modern. Students offering English or World literature from the lower division must take six units of American Literature.

Basic Course (3 units)

201 Analysis of Literary Forms

Upper Division (minimum of 27 units)

Language and composition (minimum of 3 units), selected from the following:

301 Advanced Composition

303 The Structure of Modern English

490 History of the English Language

Major Author Courses (9 units)

333 Chaucer

334 Shakespeare

341 Milton and the Seventeenth Century

* College administrative officer.

Period courses (minimum of 6 units, at least 3 in a period preceding the modern), selected from the following:

- 335 Elizabethan Drama
- 336 Elizabethan Poetry and Prose
- 342 The Age of Reason in English Literature
- 343 The Romantic Movement in English Literature
- 344 Literature of the Late Nineteenth Century
- 345 History and Development of the English Novel
- 462 Modern British and American Novels
- 464 Modern British and American Drama
- 466 Modern British and American Poetry

Electives to complete a minimum of 36 units selected from additional courses in language and composition, period courses, literary criticism, senior seminars, and comparative literature. Comparative literature offerings are listed separately, but count toward an English major.

A program of literary studies gains in perspective through the study of history, sociology, philosophy, and psychology. These fields offer vital lifelines which nourish and deepen understanding of literature. Students of literature are strongly advised to include such courses in their program, particularly in the areas of philosophy and psychology.

English majors who intend to pursue graduate study are urged to acquire proficiency in at least one foreign language. Note: Freshmen intending to major in English should complete two years of course work in a foreign language, or demonstrate equivalent accomplishment by transfer or by examination.

MINOR IN ENGLISH

Requirements: a total of 21 units.

Lower Division (maximum of 9 units)

201, 211, 212, or any lower division course beyond English 101 and 102 or the equivalent.

Lower Division electives (3 units)

Upper Division (minimum of 12 units), including:

American Literature (minimum of 3 units), selected from the following:

- 321 American Literature to Whitman
- 322 American Literature from Twain to the Moderns

Language and composition (minimum of 3 units), selected from the following:

- 301 Advanced Composition
- 303 The Structure of Modern English
- 490 History of the English Language

Major Author Courses (minimum of 6 units)

- 334 Shakespeare
- 333 Chaucer or
- 341 Milton

MASTER OF ARTS IN ENGLISH

The degree of master of arts in English requires completion of a minimum of 30 semester units beyond the bachelor's degree. Candidates having fewer than 36 units of undergraduate English normally will be required to take several additional courses to build a full undergraduate major. The 30 units in the graduate program are distributed as follows:

Foreign Languages and Literatures

Minimum units in courses restricted to graduate students (500-series).....	15
Maximum units in specialized upper division courses in English.....	9
Units in subjects related to English.....	6
Minimum total	30

Up to six units of the graduate course work may be in independent study. Three of these units may be devoted to a thesis or other written reports and articles, individually supervised by a faculty member.

All candidates must take a graduate course in the English language, in Shakespeare, and in at least one other major literary figure studied in depth. Foreign language competency, a study in comparative literature or a foreign culture is required. In addition he must take the Graduate Record Examination (aptitude and advanced test in literature) before his admission to classified graduate status.

All M.A. candidates beginning their program after the spring semester of 1966 must enroll in English 599, Independent Graduate Research, during their last semester of work toward the M.A. At the conclusion of this course they will be required to take a written comprehensive examination covering the material of the entire M.A. program.

Also see "Steps in the Master's Degree Program," p. 70.

DEPARTMENT OF FOREIGN LANGUAGES AND LITERATURES

Professor: Mathieu, Prange *

Associate Professors: Arana, Feldman, Kline (chairman), Shapley

Assistant Professors: Boarino, Cartledge, Claydon, Merrifield, Van Ginneken, Zimmermann

Instructors: Peña, Tussing

Lecturer: Cochrum, Siegfried

The program of the Department of Foreign Languages and Literatures is designed to meet the needs of several types of students, including those who seek a liberal arts education with an emphasis on a foreign language and its literature; those who intend to teach at the elementary, secondary, or college level; those who plan to use foreign languages in professional careers; or those who desire to pursue graduate studies. The program emphasizes high standards of achievement in the practical use of the language, in the study of its literature and its culture, in the mastery of applied linguistics, and in methodology of teaching, the latter acquired in part through apprenticeship.

A student may enroll at any point in the sequence of courses for which his previous study has prepared him.

Two awards are available annually to students majoring in this department: (1) a cash award to the winner of the F. F. Beer Annual Essay Contest in French, German and Spanish; (2) a cash award, given by the Club Los Amigos of Fullerton, to an upper division student who is a prospective teacher of Spanish and whose scholarship merits recognition.

MAJOR IN A FOREIGN LANGUAGE

Three options are offered: French, German or Spanish. Requirements: Courses 101, 102, 203, 204, 213, 214, or their equivalents, completed satisfactorily; plus 24 units of upper division courses, including 317, 431, 441, 451, 461, except that six of these units may be in another foreign language.

* College administrative officer.

Foreign Languages and Literatures

During his senior year, the foreign language major will take a comprehensive examination, prepared and administered by the department, in the language and literature studied.

Attention is directed to the courses in foreign literatures in translation listed elsewhere in this catalog under comparative literature. These courses may not be counted toward a major in a foreign language.

MINOR IN A FOREIGN LANGUAGE

Requirements: Courses 101, 102, 203, 204, 213, 214, or their equivalents, completed satisfactorily; plus nine units in upper division courses selected in consultation with the adviser.

MAJOR IN LINGUISTICS

Requirements for the bachelor of arts degree in linguistics are listed on page 105 of this catalog.

CREDENTIAL PROGRAMS

STANDARD TEACHING CREDENTIAL WITH A SPECIALIZATION IN ELEMENTARY TEACHING

Students who are candidates for the standard teaching credential with a specialization in elementary teaching must also complete the professional requirements, including Foreign Languages Education 432.

STANDARD TEACHING CREDENTIAL WITH A SPECIALIZATION IN SECONDARY EDUCATION

The credential program is the same as for the liberal arts major, with the following additional requirements:

Foreign Languages Education 442;

French or German or Spanish Applied Linguistics 466;

plus six units in the major language selected with the approval of the adviser and taken in the senior year or thereafter at the 400 and 500 level.

THE LANGUAGE LABORATORY

Students enrolling in courses 101, 102, 203, 204 are required, in addition to the regular class periods, to practice for the minimum of prescribed time in the language laboratory. The 30-station laboratory operates like a library; students may use it at a time most convenient to them, preferably every day in sessions of 15 to 30 minutes. Further details will be announced by each instructor and by the supervisor of the language laboratory.

Students are invited to make use of the collection of literary and cultural recordings in French, German, Portuguese, Russian and Spanish available in the language laboratory.

MASTER OF ARTS IN FOREIGN LANGUAGES

The degree of master of arts in foreign languages, with concentrations in French, German, or Spanish, requires a minimum of 30 semester units beyond the bachelor's degree. A candidate presenting a B.A. which has fewer than 24 upper division units in the major, or is otherwise inadequate, normally will be required to take additional courses to build a full undergraduate major before beginning the graduate program. The 30 units in the graduate program are distributed as follows:

Geography

	Units
Language and linguistics courses (minimum of 9 on 500 level)	12
Literature courses (minimum of 6 on 500 level)	12
Subjects in an approved related field	6
Minimum total	30

A part of the 30 units may be assigned to a thesis.

The candidate for the master of arts degree must consult a graduate adviser before beginning his program. He must take the Graduate Record Examination (aptitude and advanced test in the language area) before being admitted to clas- sified graduate status. See also the "Steps in the Master's Degree Program," p. 70.

DEPARTMENT OF GEOGRAPHY

Professors: Earick (chairman)
Associate Professors: Helin, Reith
Assistant Professors: Ketteringham, Sutton

BACHELOR OF ARTS IN GEOGRAPHY

The major in geography provides knowledge concerning variety and change in the earth's physical foundation and in man's economic, cultural and political re- lationship to that foundation. In doing so, it contributes to a broad, liberal educa- tion and furnishes sound preparation for employment in teaching, planning, gov- ernment service and business. It serves, also, as a foundation for geographic study at the graduate level.

Unit Requirements

The major consists of 36 units in geography (of which 24 units must be in upper division courses) plus 12 units in related courses. These units are in addition to those used in meeting the general education requirements. All students take (A) a core of 12 units and (B) one of three required concentrations, consisting of 24 units in geography plus 12 units in related fields. Students will normally indicate their choice of concentration upon completion of the geography core and after consultation with their adviser.

- A. Geography core: 200, 300, 310, 343
- B. Concentrations beyond core:
 - 1. Courses for students electing a liberal arts program or planning a career in elementary or secondary teaching.
 - 24 upper division units in geography:

Physical	6
Human	9
Geography 431 and 2 other regional courses	9
 - 12 upper division units of a student's teaching minor may be applied to the related course requirements. For liberal arts students 12 units will be selected with the advice of the geography faculty.
 - 2. Courses for students electing an advanced academic program leading to graduate training in college and university teaching or research, or to a career in business and government service.

24 upper division units in geography:	<i>Units</i>
Physical	6
Human	6
Techniques	6
Elective	6
12 upper division units in related courses would normally comprise an areal study or a topical concentration. Students are advised to develop a proficiency in one foreign language.	

TEACHING MINOR IN GEOGRAPHY

The minor in geography is intended as a second field for persons completing a major in another discipline in preparation for a teaching credential. It is designed to give a basic understanding of earth science and the geographic relationships helpful to the classroom teacher. The program provides a balance between the physical and social sciences.

Required Courses

Geography Core.

One course from each of the following groups: physical, human and regional.

CLASSIFICATION OF GEOGRAPHY COURSES

Core: 200, 300, 310, 343

Physical: 312, 323

Human: 333, 450, 453, 471, 481

Techniques: 475, 478

Regional: 431 through 439, 445, 463, 464

Graduate: 501, 513, 523, 599

DEPARTMENT OF HISTORY

Professors: Beck, Brown (chairman), Langsdorf,* Povlovich, Unterberger

Associate Professors: de Graaf, Sailor, Toy *

Assistant Professors: Bellot, Breese, Etue, Feldman, Flickema, Giacumakis, Hansen, Hardy, Jordan, Onorato, Pivar, Putnam, Van Deventer, Weleba

BACHELOR OF ARTS IN HISTORY

The undergraduate major in history is designed to provide an understanding of the present through a careful study of the past. This major may be pursued to fulfill various professional and cultural objectives common to a liberal arts program. It serves, especially, as a preparation for teaching, law, government, and other public services, and as the foundation for advanced study at the graduate level.

The major is composed of a minimum of 24 units in the upper division, plus the basic courses in world civilizations (History 110A-110B) and United States History (History 170A-170B). The basic courses may also be used to meet general education requirements. Students majoring in history are encouraged to include in their lower division programs some work in such fields as anthropology, economics, geography, literature, philosophy, political science and sociology.

Students intending to do graduate work in history should acquire a reading knowledge of at least one foreign language appropriate to the pursuit of advanced research in a field of history.

* College administrative officer.

History

The 24 units of upper division courses required for the major must include:

History 399 Historiography (3 units)

Six units in United States history

Six units in European history (from ancient Greece to modern times)

Six units in the history of Asia, Africa, and Latin America

TEACHING MINOR IN HISTORY

The teaching minor in history is composed of at least 20 units in history exclusive of the general education requirements:

Recommended teaching minor:

Units

World civilization (or equivalent)..... 6

Upper division work in history..... 15

Total 21

MASTER OF ARTS IN HISTORY

The program of studies leading to the master of arts in history is composed of 30 units approved by the graduate adviser.* Fifteen units of graduate courses (500 level) must be taken, including:

History 501 Seminar in the Content and Method of History (3 units);

History 590 History and Historians (3 units); and

History 598 Thesis (3 or 6 units)

Other course requirements include six units in upper division or graduate work outside the History Department but related to the study pattern.

Prerequisite to this master's degree is an undergraduate major in History with a GPA of at least 3.0 in upper division history courses. While students may be admitted with limited subject, grade, or breadth deficiencies, such deficiencies must be made up by completing courses approved by the graduate coordinator in history in addition to those required for the degree, with at least a B average.

Students entering the program must demonstrate a broad cultural understanding of one or more foreign countries of import to the master's degree study program. This requirement may be met by a reading knowledge of an appropriate foreign language or an approved selection of comparative studies, but the method must be approved by the student's adviser. In addition, the completion of the aptitude test and the advanced test in history of the Graduate Record Examination is required.

An oral examination on the thesis and course work offered for the degree will be given.

Before the appointment of an official graduate adviser, the following steps must be completed:

1. Admission to the college;
2. Filing in the Office of Admissions of one official set from all colleges where previously registered, sent directly to the Office of Admissions and Records (in addition to the transcript from the institution conferring the baccalaureate degree, required for admission to the college);
3. Submission of results of the Graduate Record Examination aptitude test and the advanced test in history; and
4. Admission to Classified Graduate Status.

In consultation with his graduate adviser, the student will develop a proposed study plan. When approved by his graduate adviser and pursued satisfactorily the programmed work can lead to the master's degree, subject to the completion of all other requirements for the degree.

See also "Steps in the Master's Degree Program," p. 70.

* Consult the graduate coordinator in history about prerequisites.

BACHELOR OF ARTS IN LINGUISTICS

(An Interdisciplinary Program)

The degree in linguistics is an interdisciplinary program administered by the Department of Foreign Languages and Literatures in collaboration with the Departments of Anthropology, English, Mathematics, Philosophy, Quantitative Methods and Speech through their representatives on the Linguistics Committee.

This program is designed for students with an exceptional interest in and aptitude for the study of the systems of human communication. It enables the undergraduate student to perceive the function of language in the development of civilization; to understand the essential relationships between language and thought and language and culture; to gain substantial familiarity with the structure of foreign languages as well as English; to observe several types of linguistic structures; and to become conversant with the historical study of language and formal techniques and theoretical foundations of linguistic analysis. The program will enable the student with linguistic and philological interests to grasp the scope of the entire field and, in addition, to determine more accurately the most meaningful concentrations in graduate study.

Lower Division Requirements

One year of Latin or Greek (6)

Anthropology 202 Introduction to Cultural Anthropology (3)

Philosophy 210 Logic (3)

Upper Division Requirements (minimum of 30 units)

Linguistics 406 Descriptive Linguistics (3)

Linguistics 530 Historical Linguistics (3)

Linguistics 490 Linguistics in Relation to Other Disciplines (1-4)

Linguistics 410 Language and Culture (3)

English 490 History of the English Language (3)

317 course in a modern foreign language (3)

Linguistics 341 Phonetics (3)

Linguistics 404 General Semantics (2)

Linguistics 375 The Philosophy of Language (3)

One elective (or more) from the following:

Mathematics 305 Elements of Set Theory (3)

Quantitative Method 364 Computer Logic and Programming (3)

Psychology 161 Elementary Statistics (3) or

Mathematics 355 A, B Probability and Mathematical Statistics (3)

Speech 403 Speech Development (3)

English 303 Structure of Modern English (3)

Mathematics 304 Mathematical Logic (3)

400 course in a modern foreign language (3)

Philosophy 368 Symbolic Logic (3)

Linguistics 402 Phonetic Analysis of Speech (3)

Students must consult with an adviser in linguistics through the Department of Foreign Languages and Literatures, before establishing their individual course of study.

Mathematics

DEPARTMENT OF MATHEMATICS

Professors: Ames (chairman), Gilbert
Associate Professors: Benson, O'Toole, Sandberg, Stiel
Assistant Professors: V. J. Klassen, V. M. Klassen
Instructor: Qualls

BACHELOR OF ARTS DEGREE IN MATHEMATICS

The program of studies in mathematics offers courses stressing the understanding of mathematical concepts and the axiomatic approach. A sufficient variety of courses is given to satisfy the needs of:

- (1) The proficient student aiming toward graduate study,
- (2) The student planning to use mathematics in a career in industry and government service,
- (3) Preprofessional students in other science areas,
- (4) The prospective elementary and secondary teacher. (See special programs of study below.)

In addition to mathematics, the major candidates will be required to pursue a year of general college physics with a calculus prerequisite. Proficiency in one modern foreign language is required.

For a major in mathematics this language requirement is met by completing with at least a C grade, German 203, French 203, Russian 203, Spanish 203 or an equivalent, the latter to be determined by the appropriate language department. For those planning to work for an advanced degree, French, German or Russian is recommended.

No credit toward the major will be allowed for specific major courses in which a grade of D is obtained. To qualify for a baccalureate degree in mathematics, students must have a C average in all courses required for the major including those in the related sciences.

A placement test is given to students in the Department of Mathematics to determine their readiness to start the calculus.

Major Program in Mathematics

Required Courses		Units
Analytic geometry and calculus		8
Intermediate calculus		6
Linear algebra		3
Modern algebra		3
Advanced calculus		6
Topology		3
Complex analysis	} Any three	9
Real analysis		
Abstract algebra		
Differential geometry		
Any other 400 level course in mathematics		3

Minor Program in Mathematics

A mathematics minor shall consist of 20 units of coursework selected from the courses offered by the Mathematics Department. They must include Mathematics 291 and at least six upper division units from the Mathematics Department. Each course must be completed with a grade C or better.

**Option in Mathematics for Teacher Education
for Elementary or Secondary Education**

	<i>Units</i>
Math 150A-B Analytic Geometry and Calculus.....	8
Math 250A-B Intermediate Calculus	6
Math 291 Linear Algebra	3
Math Ed 300 Fundamental Concepts of Mathematics—Algebra.....	3
Math Ed 301 Fundamental Concepts of Mathematics—Geometry.....	3
Math 320 Projective Geometry	3
Math 330 Number Theory	3
Math 335A Probability and Mathematical Statistics.....	3
Electives in mathematics, 300 courses or higher.....	9
	<hr/> 41

Grade requirements, and foreign language and physics requirements, are as stated above.

Minor Program in Mathematics for Teacher Education

A. For elementary education the minor shall consist of 20 units of course work selected from the course listings in mathematics and mathematics education. These courses must include Mathematics 150B and Mathematics Education 100B.

B. For secondary education the minor shall consist of 20 units of course work selected from the course listings in mathematics and mathematics education. These courses must include Mathematics 291 and six units of upper division courses in mathematics or mathematics education.

DEPARTMENT OF MUSIC

Professors: Gray, Landon (chairman), Thorsen

Associate Professor: Michalsky

Assistant Professors: Charlton, Fuszek, Karson, Kincaid, Reims, Remsen, Vaughan

Instructor: McCarty

Lecturers in applied music (part time): Barnes (piano), Barstow (violin), Bloch (clarinet), Caudill (string bass), Johnson (tuba), Kemelyan (voice), Lustgarten (cello), Moritz (flute), Muggeridge (oboe), Nowlin (bassoon), Olsson (voice), Patterson (French horn), Paul (voice), Peebles (trombone), Remsen (harp), Shaffer (organ), Voorhies (piano), Whitsitt (trombone)

The Department of Music offers courses in music for both majors and non-majors. The fundamental purpose of the music major curriculum leading toward the baccalaureate degree is to provide the necessary training in each of the related aspects of music such as its history and literature, theoretical studies, and musical performance. Such a program of studies is based on the need to provide serious students with a core curriculum which will prepare the individual in such areas as (a) the knowledge of the history and relationships of music as an art form, (b) a comprehensive and analytical understanding of musical literature, (c) a working knowledge of music theory and structure, (d) a high degree of competence in a performing field, and (e) a specialization within the major.

The music program is designed to educate:

1. Students in general, in terms of composite minors, music minors, or broad offerings in the humanities or liberal arts.
2. Students preparing to teach in the elementary and/or secondary schools, with a major field concentration in music (special music teachers).

Music

3. Students preparing to teach in the elementary schools with a major field concentration in music (classroom teachers).
4. Students preparing to teach in the junior colleges and four-year colleges with a major field concentration in music.
5. Students other than music majors preparing to teach as classroom teachers in the elementary schools.
6. Students wishing to prepare for various vocations in music, such as:
 - a. Church music directors and organists
 - b. Teachers of music in private studios
 - c. Music librarians
 - d. Professional performers of music
 - e. Composers and arrangers
 - f. Industrial and recreational music directors

REQUIREMENTS OF THE DEPARTMENT OF MUSIC

Note: Special requirements are available in detail from the office of the Department of Music, M262.

1. Entrance examinations in basic piano, voice, theory, and music history will be given all music majors at the time of entrance to the college and to lower division students before acceptance in upper division music major sequence. These examinations plus auditions in the major performance areas are for placement and to satisfy credential requirements in the minor performance fields. Students who are deficient in any of these areas will be expected to take additional work as suggested by the faculty adviser.
2. Music majors will be expected to declare a principal area of performance with the approval of the department chairman and faculty adviser, no later than the beginning of the junior year. It will be expected that each student will prepare for suitable development within this major area of performance, culminating in the successful presentation of a senior recital before he may be approved for graduation. The following steps should be taken as a part of this preparation:
 - a. Declaration of an area of performance concentration (voice, piano, instrument, or combination solo instrument or voice and conducting) at the time of entrance to the college.
 - b. Demonstration of performance progress before a faculty jury each semester.
 - c. Appearance in at least one minor recital or an assisting performer at least once each semester.
3. All music majors are required to participate in a major performance group (band, orchestra, or chorus) each semester of the regular school year. Students who are wind or percussion instrument majors in their applied field must register for band (or orchestra if designated by instrumental faculty) every semester; string majors must register for orchestra every semester; voice majors must register for chorus every semester. Music education majors whose performance area is piano or organ should be assigned to one major performance group by academic adviser. Exceptions to this requirement may be made only by action of the music faculty.
4. Instrumental and piano majors are required to take part in small ensembles for a minimum of two semesters.
5. The major area of performance concentration for major in music requires work in applied music, as follows:
 - a. Piano, voice and instrumental majors—must complete a minimum of 8 semesters of applied music in the major field of concentration, leading

toward the successful presentation of a senior recital in the major performance field.

- b. Choral or instrumental conducting majors—must complete a minimum of eight semesters of applied music in the major field of performance concentration, in addition to a minimum of six units in conducting, leading toward the successful presentation of a joint recital in the major performing field or a conducting recital or both.
 - c. A preliminary functional piano examination in piano will be taken at the beginning of the junior year. Before the end of the senior year, students in the secondary credential program must pass a functional piano examination.
 - d. Composition majors must complete a minimum of eight units, including: Mu 322A, B; Mu 370 (2 units); Mu 377 (2–4 units). This course of study will culminate in the successful completion of a composition recital, for the B.A. degree.
6. Senior transfer students entering California State College at Fullerton with a major in music, or graduate students in music entering to complete credential requirements are expected to complete a minimum of one semester of successful upper division work in music before they may be approved for directed teaching. Required courses and competencies expected of all the college music majors must be satisfied before endorsement by the faculty committee for acceptance in the credential program.
7. All music majors will be expected to attend a weekly departmental organization class (Mu 400) each semester of enrollment.

MUSIC DEGREE PROGRAMS

The Department of Music offers a variety of courses and programs leading to baccalaureate and graduate degrees in teaching and the professions. These degrees may be earned in three degree patterns. It is possible to elect suitable concentration within these specializations in such areas as applied music, composition, conducting, music education, and music history and literature.

OPTION I

BACHELOR OF ARTS IN MUSIC

(Liberal Arts Emphasis)

This program prepares students in either (1) music history and literature, or (2) music for elementary classroom teachers.

The music history and literature specialization provides suitable preparation for advanced degrees in musicology and for certain preprofessional goals, including the fields of musical acoustics, music therapy, ethnomusicology, library science in music, and music in industry and recreation.

The emphasis for classroom teaching is not designed for the music specialist in public schools (see Option III) and would require additional course work in some areas if used as preparation for most graduate degrees in music.

The bachelor of arts in music, liberal arts emphasis shall consist of no fewer than 50 units, of which at least 26 shall be in the upper division. The following minimum requirements are basic to this degree objective:

Music

Music Requirements:

Lower Division

	Units
Theory of Music (MU 111A,B; 211A,B).....	12
Music History and Literature (151A,B).....	4
Applied Techniques (including ensemble, principal instrument or voice, basic piano and voice).....	8
Total	24

Upper Division

Theory of music.....	6
(Note: Majors in musicology must include Mu 312A,B (4), counterpoint, and MU 321A, Form and Analysis, or MU 323A, Orchestration)	
Music History and Literature (Mu 351A,B).....	6
Specialization in the major and general electives in music	14
<i>Music History and Literature</i>	<i>* Classroom Teaching</i>
<i>Emphasis</i>	<i>Emphasis</i>
Must include three period or specialized music history and literature courses	Must include MU 333, Music and Child Development..... 3 units
6 units	
Total	26
Total, lower and upper division.....	50

Allied Requirements:

Music History and Literature Emphasis

1. An academic minor 20
(by approval of the academic adviser and the department)
To provide suitable preparation in academic disciplines outside the field of music in such areas as
 - (a) liberal arts studies;
 - (b) supportive courses for advanced degrees in musicology; and,
 - (c) preprofessional goals
2. Foreign language, to be satisfied by one of the following:
 - (a) four years study of foreign language at the secondary school level,
 - (b) a pass examination given by the Department of Foreign Languages and Literatures, or
 - (c) completion of the second semester of the 10-unit beginning course in foreign language.

Emphasis for Classroom Teachers:

1. Diversified studies in academic areas appropriate for classroom teachers such as English, literature, mathematics, science, art, drama, social sciences, foreign language, and physical education and health by consultation with the major and professional advisers.
2. A course in diction or foreign language.
(May be satisfied by a minimum of 1 semester of foreign language or Mu 390, Diction for Singers)

* Elementary credential candidates must take a minimum of two units each of piano and voice (nonprincipal) and pass satisfactorily the junior level proficiency in each.

OPTION II

BACHELOR OF ARTS IN MUSIC

(Performance Emphasis)

This degree program is for persons specializing in performance and applied music techniques.

The music major, professional degree program shall consist of no fewer than 60 semester units, of which at least 36 shall be in the upper division. In addition, students are required to take Mu 151A,B or the equivalent as partial fulfillment of the general education requirement in fine and applied arts. The following minimum requirements are basic to this degree objective.

Lower Division	<i>Units</i>
Theory of Music (Mu 111A,B; 211A,B).....	12
Applied techniques:	
principal instrument or voice..... 8 }	12
major performance ensemble..... 4 }	
Total	24
Upper Division	
Theory of Music	8
Music History and Literature (Mu 351A,B).....	6
Applied techniques:	
principal instrument or voice..... 4 }	10
major performance ensemble..... 4 }	
chamber or allied performance ensembles... 2 }	
Specialization in the major (to be selected in consultation with and with the approval of the academic adviser from appropriate areas of: composition, conducting, and/or performance).....	12
Total	36
Total, lower and upper division.....	60

OPTION III

BACHELOR OF ARTS IN MUSIC

(Music Education Emphasis)*

Five-year program leading toward the Standard Teaching Credential, Secondary School Teaching Specialization. For complete professional education requirements, see School of Education section.

This program prepares the student for a teaching career as a music specialist in the public elementary or secondary schools and junior colleges of California. In addition to requiring competence as a performer (see general requirements 2 and 5), this option requires students to complete prescribed work in conducting, orchestral instruments, basic voice and piano. In their fifth year, students also will complete the music education techniques block (Mu 441, 442, 443 and Ed 449) before admission to student teaching. The minimum requirements are 60 semester units, of which 36 shall be in the upper division. The following are the requirements for this degree objective:

* Holders of the standard teaching credential, secondary specialization, may teach music (as a music major) in either or both secondary and elementary public schools of California. The preparation described above is designed for the "music specialist" who serves at either level.

Music

Lower Division

	Units
Theory of music	12
Applied techniques, to include:	
principal instrument or voice	4
major performance ensemble	4
piano	2
voice	2
Total	24

Upper Division

Pass Jr. Level Piano Functional Examination	
Theory of music	8
History and Literature of Music (Mu 351A,B)	6
Applied techniques, to include:	
principal instrument or voice	4
major performance ensemble	4
Specialization in music education techniques:	
conducting	6
orchestral instruments classes	8
Sr. piano functional and senior recital	
Total	36
Total, lower and upper division	60

Postgraduate Year

	Units
Music education techniques block, to include:	
Mu 441	2
Mu 442	2
Mu 443	2
Ed 449	1
first semester	7
Student teaching:	
Mu Ed 749	6
second semester	6
General electives in music and minor area of study	17
Total	30

MINOR IN MUSIC

The minor in music may be used as an appropriate area of study by persons whose majors are in other fields, or may be used to satisfy minor field requirements for elementary or secondary teaching credentials. A maximum of 12 units from the lower division may be included in work counted toward the music minor. The music minor requires a minimum preparation of 20 units.

Composite of Lower Division and Upper Division

	Units
Theory of Music (selected from Mu 101, 111A,B, 211A,B or any 300- or 400-level theory classes for which student is qualified)	6
Music history and literature (Mu 100, 151A,B, 350 or courses at the 300 or 400 level for which student is qualified)	4-6
Applied Techniques (including ensemble, conducting, piano or voice, orchestral instruments, and principal instrument or voice)	8-10
Note: Students expecting to use the minor for teaching must complete four units (two courses) of Mu 281 a-d, Orchestral Instruments, and a minimum of two units in an ensemble appropriate to their area of specialization.	
Total	20

MASTER OF ARTS IN MUSIC

The program of studies leading to the master of arts in music provides advanced studies in breadth as well as in an area of graduate specialization. The program is further intended to provide advanced course work with a suitable balance in such music studies as theory, composition, history, literature and advanced applied techniques. There are suitable graduate specializations in the areas of history and literature of music; advanced applied techniques; theory-composition; and music education.

The master of arts in music is especially designed for teachers and supervisors of music; persons intending to specialize in applied fields in the pursuit of occupational goals; individuals preparing for college teaching; and persons intending to pursue advanced degrees beyond the master's level.

Prerequisites for Admission to the Program

The student must have a baccalaureate degree with a major in music (or the equivalent of a major, i.e., 24 upper division courses in music). Opportunity is given the student to remove deficiencies by taking certain prescribed courses. Such courses cannot be applied to the master's degree program. The student must also take the aptitude and advanced music tests of the Graduate Record Examination and pass the graduate music placement-proficiency examination.

Requirements for the Degree

The degree program requires 30 units of graduate study, no more than nine of which shall be outside the field of music, and at least 12 of which must be in 500-level courses in the major. The student will take Mu 500 (Graduate Studies in Music, two units) early in his program, and must include at least four units in history and literature of music, four in advanced techniques, two in theory composition, and an added six units in one of the above, or in music education, as an area of specialization. A thesis or project is required, for which from three to six units may be granted. In addition, each program will include at least six units of study outside the field of music, but supportive to the program. Each program is individually designed in conference with the adviser.

Also see "Steps in the Master's Degree Program," p. 70.

FEES FOR APPLIED MUSIC

Applied music (private instruction in voice or major instrument), per lesson, \$1-\$6.

Average studio lesson fee, including 14 half-hour lessons (one unit) and examination, per semester \$70-\$96.

DEPARTMENT OF PHILOSOPHY

Professor: Alamshah (chairman), Becker*

Associate Professor: Hayner

Assistant Professor: Overvold, Silvers

Instructor: Hitchcock

The aim of the Department of Philosophy is twofold: (1) to present curricular offerings in a manner that will awaken an appreciation for philosophical concerns; delineate the significant contributions made to the history of ideas by the great philosophers; and develop in those who concentrate in the field an appreciable degree of precision in communicating the subject matter of philosophy; (2) to draw attention to the significance of philosophical analysis in areas of vital concern for the life of society.

* College administrative officer.

Philosophy

Coursework in philosophy, therefore, has the following objectives:

- (1) To help students understand their own philosophical concerns;
- (2) To uncover and to delineate sound methodology for the clarification of philosophical problems; and
- (3) To prepare students who are seeking higher degrees in philosophy.

BACHELOR OF ARTS DEGREE: PHILOSOPHY MAJOR

Requirements: A total of 36 units, beyond general education requirements, with the following distribution:

Lower Division (maximum of 12 units, beyond general education requirements)

Core requirements (6 units)

211A. Classical Schools of Philosophy (3)

211B. Classical Schools of Philosophy (3)

Electives (6 units)

Note: Students who have taken their lower division work elsewhere will be given credit for equivalent coursework. Up to 12 units of such coursework may be allowed for credit at the discretion of the department.

Upper Division (minimum of 24 units)

Core requirements (15 units)

331 History of Philosophy: Rationalism and Empiricism (3)

332 History of Philosophy: Kant and the 19th Century (3)

Plus choice of one of the following:

417A, 417B Aristotle (3,3)

427A, 427B Spinoza (3,3)

437A, 437B James (3,3)

447A, 447B Plato (3,3)

457A, 457B Hume (3,3)

467A, 467B Kant (3,3)

Plus 499 Independent Study (3)

Electives (minimum of 9 units)

A program in philosophy profits greatly through the study of literary masterpieces, psychology, and the social sciences. Students of philosophy are advised to supplement their studies in philosophy with coursework offered in these fields. Philosophy majors are urged to acquire proficiency in a foreign language.

MINOR IN PHILOSOPHY

Requirements: A total of 21 units (beyond general education requirements)

Lower Division (maximum of 9 units)

Core requirements (6 units)

211A Classical Schools of Philosophy (3)

211B Classical Schools of Philosophy (3)

Electives (3)

Upper Division (minimum of 12 units)

Core requirements (6 units)

331 History of Philosophy: Rationalism and Empiricism (3)

332 History of Philosophy: Kant and the 19th Century (3)

Electives (6)

DEPARTMENT OF PHYSICS

Professors: Adams, R. (chairman), Blend

Associate Professor: Dittman

Assistant Professor: Crowley

BACHELOR OF ARTS DEGREE IN PHYSICS

The program leading to the bachelor of arts in physics provides the fundamental instruction basic to the needs of the student who is preparing (1) to teach in elementary or secondary schools, (2) to undertake graduate work in physics or related fields, (3) to pursue additional collegiate studies leading to professional degrees in dentistry, law, medicine, nursing, and other professional, related areas, and (4) to seek employment in technical and applied fields.

The faculty is concerned that the student of physics shall have adequate education in other liberal arts subjects, including foreign language. Through curriculum requirements and through elective subjects, the physics student will be expected to have a broad education in traditional liberal arts subjects, the several sciences, and mathematics. In particular, the student is urged to make his selections of elective courses outside the field of physics.

To qualify for the bachelor of arts in physics, students must have a C average in all courses required for the major, including those in the related sciences. A proficiency in one modern foreign language (Russian, German, or French) is required. A reading comprehension of a second foreign language is strongly recommended for students planning graduate study leading to the Ph.D. degree. This requirement is normally met by completing two semesters of fundamental foreign language (10 units) plus one semester of scientific foreign language (3 units) with a grade of C or better in each course. Under unusual circumstances the requirement may be met by examination upon approval of the department chairman. Application must be made in the departmental office by October 15 for examination during the fall semester and by February 1 for examination during the spring semester.

No credit toward the major will be allowed for major courses in which a grade of D is received.

MINIMUM DEPARTMENTAL REQUIREMENTS FOR DEGREE *

Lower Division	Units
General chemistry (satisfies general education physical science requirement)	10
Mathematics: analytic geometry and calculus (satisfies general education mathematics requirement)	14
Fundamental physics	13
Modern foreign language (Russian, German or French)	
Proficiency in one language required. (For details see paragraph above.)	
Upper Division Physics †	
431 Electricity and Magnetism	3
441 Analytical Mechanics	3
411 Theory of Wave Motion	3
453 Nuclear Physics <i>or</i>	
451 Modern Physics	3
416 Thermodynamics	3
455 Introduction to Quantum Physics	3
481A Advanced Physics Laboratory (electrical measurements and electronics)	3

* Substitutions in the program may be made on approval by the department chairman.

† Theory courses will normally be taken in the order of listing. Laboratory courses will normally be taken in numerical order of course number.

Physics

	<i>Units</i>
481B Advanced Physics Laboratory (mechanics, acoustics, physical optics, atomic spectra)	3
481C Advanced Physics Laboratory (atomic and nuclear physics)	3
481D Advanced Physics Laboratory (selected experiments in classical and modern physics)	3
Total	30

Required Mathematics

Mathematics courses in addition to analytic geometry and calculus	9
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MINOR IN PHYSICS

A minimum of 20 units of physics are required for a minor. These shall include 12 units of lower division physics (or equivalent as determined by the department of physics), and a minimum of 8 units of upper division physics, including a minimum of 2 units of advanced physics laboratory.

Suggested Eight-semester Program for Major in Physics

Semester 1. Freshman

Math 150A Analytic Geometry and Calculus	4
Engl 101 Composition and World Literature	3
For Lang 101 Fundamental Russian, German, or French	5
Any required general education course	3
Any physical education activity course	1/2
Total	15 1/2

Semester 2. Freshman

Math 150B Analytic Geometry and Calculus	4
Engl 102 World Literature and Composition	3
For Lang 102 Fundamental Russian, German, or French	5
Phys 221A, 222A Fundamental Physics	5
Any physical education activity course	1/2
Total	17 1/2

Semester 3. Sophomore

Math 250A Intermediate Calculus	3
Phys 221B, 222B Fundamental Physics	5
For Lang 203 Intermediate Russian, German, or French	3
Chem 101A General Chemistry	5
Any physical education activity course	1/2
Total	16 1/2

Semester 4. Sophomore

Math 250B Intermediate Calculus	3
Phys 221C Fundamental Physics	3
Any required general education course	3
Any required general education course	3
Chem 101B General Chemistry	5
Any physical education activity course	1/2
Total	17 1/2

Political Science

Units

Semester 5. Junior

Math 291	Linear Algebra	3
Phys 431	Electricity and Magnetism	3
Phys 481A	Advanced Physics Laboratory	3
Any required general education course		3
Bsc 111	Principles of Biology	4
Total		16

Semester 6. Junior

Math 350A	Advanced Calculus	3
Phys 441	Analytical Mechanics	3
Phys 481B	Advanced Physics Laboratory	3
Phys 411	Theory of Wave Motion	3
Any required general education course		3
Any required general education course		3
Total		18

Semester 7. Senior

Math 350B	Advanced Calculus	3
Phys 453	Nuclear Physics <i>or</i>	
Phys 451	Modern Physics	3
Phys 481C	Advanced Physics Laboratory	3
Any required general education course		3
Any required general education course		3
Total		15
(Honor students may add Physics 491, Senior Report (1).)		

Semester 8. Senior

Phys 416	Thermodynamics	3
Phys 455	Introduction to Quantum Physics	3
Phys 481D	Advanced Physics Laboratory	3
Electives		6
Total		15
(Honor students may add Physics 492, Senior Report (2).)		

DEPARTMENT OF POLITICAL SCIENCE

Professors: Hyink,* Mason, Richardson (chairman)

Associate Professors: Ashley, Foster, Kerschner

Assistant Professors: Bell, Feraru, Lepper, Mayer, Wilcox, Yinger

BACHELOR OF ARTS IN POLITICAL SCIENCE

The undergraduate major in political science prepares students for teaching, government employment on the local, state and national level, foreign service, graduate work in political science, law school, or leadership in civic and political activities. Political science is also of value to prospective special librarians and journalists.

* College administrative officer.

Political Science

Unit and Course Requirements

The major consists of 30 units in political science of which at least 24 units must be in the upper division, plus 12 units in related departments taken with the approval of the adviser. These units are in addition to those meeting the general education requirements. Prospective majors are encouraged to take courses in anthropology, economics, geography, history, philosophy, psychology, sociology, and statistics.

All majors are required to take:

Political Science 100, 231, 306, 341, and any two of the following:

- a. 251
- b. 311 or 320
- c. 373 or 374

The department has no rigid concentration requirements.

Each student will be assigned to a member of the department for individual guidance and advice designed to prepare the student for his educational and professional objectives. Students planning on a career in the foreign service are encouraged to take their elective units in American culture, geography, and history. Proficiency in a foreign language is strongly recommended for students planning on graduate work or the foreign service. A course in statistics is advisable for others.

The public administration program is designed to prepare students for public service careers with local, state and federal units of government. The program also provides the basis for graduate work for those interested in advanced degrees. Students, in addition to taking the essential courses, will have numerous opportunities to study, observe, and serve as interns in governmental agencies in the area.

The prelaw student may work out an individual program in consultation with his adviser to meet the specific requirements for admission to the law school of his choice. Courses in related fields may include work in anthropology, economics, history, psychology, and sociology; also in accounting and report writing.

TEACHING MINOR IN POLITICAL SCIENCE

The teaching minor is composed of 21 units of political science, in addition to those meeting the general education requirements.

MASTER OF ARTS IN POLITICAL SCIENCE

This degree is planned for students interested in advanced graduate work toward the doctoral degree in political science, for the professional improvement of high school and junior college teachers, government employees, personnel in the military services, and for individuals interested in civic and political leadership.

Prerequisites

A student desiring to enter the M.A. program must have completed a minimum of 24 hours of upper division work in political science and/or pertinent related fields, as approved by his M.A. committee, with a GPA of 3.0. The aptitude test of the Graduate Record Examination is required, and the GRE Advanced Test in Government may also be required. A reading knowledge of a foreign language, a demonstrated knowledge of appropriate research methods (PS 306 or its equivalent), of statistics or computer programming or both will be required by the M.A. committee as preparation if pertinent to the student's professional needs.

Each student's record and background will be carefully evaluated before admission to classified status. Students may be admitted with limited subject deficiencies which must be removed by taking courses or challenge examinations with the approval of their M.A. committee. Grade deficiencies must be removed before admission to the program. Committee-approved courses taken to remove deficiencies may not be counted toward the requirements for the M.A. degree.

Program of Study

A student must design a study plan of 30 units of course work, subject to the approval of his M.A. committee (as part of the requirements for admission to classified status). At least 18 of these units must be in political science, of which 15 units, exclusive of thesis or project, must be 500-level courses. A thesis or project (3-6 units) may be required. A comprehensive final written examination is required; an oral examination may also be required.

See also "Steps in the Master's Degree," p. 70.

DEPARTMENT OF PSYCHOLOGY

Professors: Edwards (Chairman), Lindley, Schmidt, Tsai

Associate Professor: Carlson

Assistant Professors: Calhoun, Curtis, Dondis, Grayson, Jaffee, Lindner, Morrow

BACHELOR OF ARTS IN PSYCHOLOGY

The major in psychology consists of 36 units of lower and upper division work designed for students (1) who want a sound background in psychology as a science, (2) who want a basic understanding of human behavior as a supplement to some other major course of study, and (3) those who wish to acquire a thorough undergraduate training in psychology in anticipation of graduate study.

Requirements for the Major

Lower Division

		<i>Units</i>
Psychology 101	Introductory Psychology	3
Psychology 161	Elementary Statistics	3
Psychology 202	Principles of Psychology	3

Upper Division

To take upper division work, at least six units of psychology (including Psychology 101) must have been completed in the lower division. In addition, a minimum of 27 units of upper division work constitutes a major in psychology. Fifteen units are required as follows:

Psychology 302	Experimental Psychology: Learning and Motivation	3
Psychology 303	Experimental Psychology: Sensation and Perception	3
<i>or</i>		
Psychology 321	Physiological Psychology	3
Psychology 351	Social Psychology <i>or</i>	3
Psychology 331	Psychology of Personality	3
Psychology 461	Group Psychological Testing	3
Psychology 408	History of Psychology	3

A minimum of 12 additional units in psychology courses will be selected in consultation with the academic adviser.

Recommended Related Courses

Courses from each of the following areas according to the student's interests: (1) social sciences; (2) physical sciences; (3) biological sciences; (4) mathematics; (5) humanities.

Students planning to do graduate work in psychology are advised to plan additional work in biological and physical sciences and to include at least a one-semester course in college mathematics. Undergraduate work in foreign languages is also recommended.

Psychology

MASTER OF ARTS IN PSYCHOLOGY

This degree is planned to extend the body of psychological knowledge developed in the undergraduate major and result in the development of greater depth in understanding the content of psychology; increased skill in research capabilities; the professional reporting of research; potential career skills; and sound preparation for students planning to go on to advanced graduate work. On completion of this program, students will have a better understanding of the many and complex disciplines in psychology as well as an understanding of related behavioral and scientific areas of study.

Prerequisites

Students to be admitted to the program must: (1) meet the general prerequisites for graduate work formulated and recommended by the college; (2) have completed a bachelor's degree with a major in psychology or 24 units in upper division psychology including a course in statistics, a course in the history of psychology, an upper division laboratory course in psychology, at least two of the following courses: physiological psychology, learning, sensation and perception, motivation, and at least one of the following courses: social psychology, personality, developmental psychology; psychological testing; (3) have completed or must complete within the first year of graduate study a course in college mathematics, a course in the biological sciences beyond the college's general education requirement, and a course in sociology or anthropology beyond the college's general education requirement; (4) have completed a baccalaureate degree with a 2.5 general average and a 3.0 average in psychology; (5) show satisfactory performance on the aptitude test and the advanced test in psychology, which are parts of the Graduate Record Examination.

Program of Study

The Master of Arts in Psychology requires a minimum of 24 units of approved graduate work in the major field, including the completion and acceptance by the Psychology Department Graduate Study Committee of a written thesis, plus six units of approved work for graduate credit from other related areas.

The student, in consultation with an adviser on the staff of the Psychology Department, shall develop a program of studies which will be submitted to the Graduate Study Committee of the Department of Psychology for approval.

Course requirements for the M.A. in Psychology:

	Units	Totals
Psychology 500 Advanced General Psychology.....	3	
Psychology 510 Advanced Experimental Design.....	3	
Psychology 520 Seminar: Experimental Psychology.....	3	
Psychology 521 Seminar: Personality and Social Psychology.....	3	
Psychology 598 Thesis.....	3-6	15-18
Related courses outside psychology.....	6	6
Elective courses in psychology.....	6-9	6-9
Total units for M.A. in psychology.....		30

Students will be required to pass a comprehensive examination in psychology in addition to satisfactory performance in the above courses.

See also "Steps in the Master's Degree Program," p. 70.

DEPARTMENT OF SCIENCE AND MATHEMATICS EDUCATION

Professor: Lay

Associate Professors: Lepper, Turner (chairman)

Assistant Professor: Fletcher

Lecturer: Woyski

The department does not offer any degree program at this time.

The Department of Science and Mathematics Education prepares students to teach in the areas of science and mathematics at the elementary and secondary levels, to provide guidance for experienced teachers in the study and use of educational practices developed for the teaching of sciences and mathematics and to help teachers develop original ideas in their areas of specialization.

The offerings of this department include basic professional training courses required for teacher certification, advanced coursework in science and mathematics education, and certain academic content offerings designed especially for teacher preparation.

Requirements for teaching majors and minors in science and mathematics are listed under the respective academic departments.

REQUIRED COURSEWORK

The following courses offered by the Department of Science and Mathematics Education are required for teaching credential candidates.

Elementary School Credential Candidates—Any Major

Math Ed 100A Fund. Concepts of Math.—Arithmetic

Sci Ed 310 Elementary Experimental Science

Secondary School Credential Candidates—Science

Sci Ed 442 Teaching Science in the Secondary School

Sci Ed 749 Student Teaching in Science—Secondary

Secondary School Credential Candidates—Mathematics

Math Ed 100B Fund. Concepts of Math.—Arithmetic

Math Ed 300 Fund. Concepts of Math.—Algebra

Math Ed 301 Fund. Concepts of Math.—Geometry

Math Ed 442 Teaching Mathematics in the Secondary School

Math Ed 749 Student Teaching in Mathematics—Secondary

MASTER OF ARTS IN SOCIAL SCIENCES

(An Interdepartmental Program)

The master of arts in social sciences allows a student to pursue advanced work in two or three related fields.* Selection may be made from the following: anthropology, economics, geography, history, political science, psychology, and sociology. The thirty (30) units approved by the graduate adviser, from the department of the student's first field, are to be arranged in one of the following patterns:

Pattern A (two fields)	First field	_____18 or 15	units
	Second field	_____12 or 15	units
		<hr/> 30	<hr/> 30
			units

* Consult individual departments about prerequisites.

Sociology

Pattern B (three fields)	First field	15 or 12 or 12 units
	Second field	9 or 12 or 9 units
	Third field	6 or 6 or 9 units
		<hr/> 30 30 30 units

Specific requirements include:

At least 12 units of graduate courses (500 level);

An upper division or graduate level course in research methods and bibliography in one of the social sciences;

Thesis or project (or approved papers prepared for graduate seminars, in lieu of a project)

Oral examination on the thesis or project and on the courses offered for the degree;

Completion of the aptitude test of the Graduate Record Examination;

The Advanced Test in Social Sciences of the Graduate Record Examination may be required.

There is no foreign language requirement, but certain fields may require work in statistics. An undergraduate major in social sciences, or 24 units of upper division courses in social sciences (approved by the adviser) with a GPA of at least 3.0 is required. The graduate adviser will be selected from the first field. In case of the 15-15 pattern, the adviser is chosen from the department in which the thesis or project is written.

Before the appointment of a graduate adviser, the following steps must be completed:

1. Admission to the college;
2. Filing in the Office of Admissions of one official set of transcripts from all colleges where previously registered (sent directly from these institutions to the Office of Admissions and Records). This is in addition to the transcript from the institution conferring the baccalaureate degree, required for admission to the college;
3. Submission of results of the Graduate Record Examination(s); and
4. Admission to classified graduate status.

See also "Steps in the Master's Degree Program," p. 70.

DEPARTMENT OF SOCIOLOGY

Professor: Davis (chairman)

Associate Professors: Hagedorn, J. R. Smith, Works

Assistant Professors: Copp, Faia, Jacobson, Lackey, Mend, Palisi, Poorkaj, Ransford

BACHELOR OF ARTS IN SOCIOLOGY

The major in sociology provides knowledge concerning the structure and functioning of human society. It may serve as preparation for: (1) graduate study in sociology and careers in teaching and research, (2) employment or graduate study in social work, corrections and related careers, or (3) careers in business and industry, various areas of government service, and the study of law. Sociology has applications to a wide range of careers and to participation as a citizen.

Unit Requirements

The required minimum for the major is 42 units, in addition to those taken for the general education requirement, distributed as follows:

Courses in Sociology

Thirty units must be taken in sociology, 24 in upper division courses. Sociology 201 is required, and 3 additional units are acceptable from lower division offerings. The minimum of 24 upper division units must include 331A, 331B, 341, 481, and at least one of the following: 436, 470, 473, 477.

Minimum units 30

Related Courses

Twelve *upper division* units are to be taken in the related fields of anthropology, economics, geography, history, political science, and psychology, to be approved by the major adviser.

Minimum units 12

Minimum total units for the major 42

TEACHING MINOR IN SOCIOLOGY

For teaching credential purposes a minor consists of 21 units in sociology, distributed as follows:

	<i>Credits</i>
201	3
202 or 411 or 413 or 431	3
341 or 451	3
477 or 480 or 481	3
Electives in sociology	9
	21

Social Welfare

Students seeking employment or graduate study in social work may major in sociology; but satisfactory preparation is also provided by other majors, such as psychology, anthropology, economics, or political science. There is no major in social welfare, but three courses—Social Welfare 311, Welfare Institutions; 351A, Social Work Methods; and 351B, Social Work Methods—provide a thorough introduction to the field by professional social workers. The best preparation for a welfare position with the B.A. degree, or for graduate study in social work, is a broad background in the social sciences.

MASTER OF ARTS IN SOCIOLOGY

The program for this degree provides advanced study in general sociology. It offers an opportunity to broaden one's knowledge of society, to strengthen skills of sociological analysis, and to do research in depth in an area of particular interest. It may be used as preparation for study toward the doctorate in sociology, for junior college teaching, participation in research, or for a variety of positions in business and industry, corrections, the community, or government.

Prerequisites

Admission to the program requires a minimum of 18 upper division units in sociology, including the following courses or their equivalents:

- 331A Social Research Methods (design, collecting data, etc.)
- 331B Social Research Methods (elementary statistics)
- 341 Social Interaction
- 481 Sociological Theory

Speech

Also required is a GPA of 3.0 (B) for all work in sociology, a 2.5 average for all previous college work, and satisfactory performance on the aptitude test of the Graduate Record Examination. Students with limited grade or course deficiencies may be considered for admission to the program on completion of adviser-approved courses with a B average. *

Program of Study

The study plan for the degree must include the following:		Units
1. Sociology 531	Advanced Methods and Measurements in Sociology—	3
2. Sociology 581	Analysis of Sociological Theory —————	3
3. Sociology 598	Thesis —————	6
4. Any two graduate seminars in sociology (3 units each)	—————	6
5. Upper division or graduate work in sociology	—————	6
6. Upper division or graduate work in related fields	—————	6
		<hr/> 30

To complete the requirements, the candidate must successfully defend the thesis in an oral examination by a committee, and pass a comprehensive examination.

For requirements "5" and "6" above, any adviser-approved 400-level or 300-level course taken as a graduate student may be used. Additional seminars, or Sociology 599, Independent Graduate Research, may be used for requirement "5", but not in lieu of the thesis. Normally the student will register for thesis two different times, for three units each semester.

Also, see "Steps in the Master's Degree Program," page 70.

DEPARTMENT OF SPEECH

Professors: Andersen, Fessenden (chairman), Long,* Nelson

Associate Professors: Granell, Kaplan

Assistant Professors: Enell, Good, Riley

Lecturers: Nichols, Schon

Course work in the Department of Speech is directed toward five goals: (1) to provide an understanding and appreciation of the importance of the role of oral communication in our society; (2) to provide professional training in such areas as teaching, business, law, and others where the ability to speak well and to communicate effectively is basic; (3) to prepare specialists in public address and in speech pathology and audiology; (4) to provide active intramural and intercollegiate forensic programs; and (5) to correlate school and community clinic experiences with the theory, principle, and history of speech pathology and audiology.

A master of arts degree program is offered for students who need this level of work in their professional fields and those who plan to continue toward the doctorate in speech.

MAJOR IN SPEECH FOR THE BACHELOR OF ARTS DEGREE

The major requires a total of 36 units, 24 of which must be from 300- and 400-level courses.

Course programs are planned (1) to prepare students who seek to fulfill the liberal arts objectives of the college with an emphasis in the field of speech, and (2) to prepare students who seek a standard teaching credential.

A. Liberal Arts Major Programs: These programs include the following core requirements and emphases.

* College administrative officer

Core requirements

1. Lower division:
A minimum of 8 units (excluding Speech 101)
A basic course in public speaking: Speech 231
2. Upper division:
A course in discussion: Speech 324 or Speech 424
A course in phonetics: Speech 341
An advanced course in public speaking: Speech 334

Emphasis in either public address or speech pathology and audiology

1. Public address:
A basic course in logic and evidence: Speech 235
An advanced course in argument: Speech 335
A course in rhetoric: Speech 436
Electives in public address, advisor approved, to complete the required 36 units.
2. Speech pathology and audiology:
A course in speech science: Speech 340
A general course in speech correction: Speech 342
An advanced course in speech pathology: Speech 441
A course in audiology: Speech 463
Electives in speech pathology and audiology, advisor approved, to complete the required 36 units.

B. Standard Teaching Credential Programs: These programs are built on the liberal arts major program with a public address emphasis.

1. For elementary teaching add Speech 202 to lower division requirements and 301 to upper division requirements.

2. For secondary teaching add Speech 138 to lower division requirements and 338 to upper division requirements.

The fifth year is required for either of the above credential programs and is to include a minimum of six units of adviser approved electives in speech. Speech Ed 442 must be taken by the student seeking the secondary teaching credential before he can be approved for student teaching.

3. For junior college teaching the student follows the program given for the secondary school teaching. In addition, the master of arts degree in speech is required.

MINOR IN SPEECH

The minor in speech is to follow one of these two patterns:

1. The minor for the elementary teaching credential is 24 units as follows: Speech 101 (not to be included as credit for minor), 211 or 311, 231, 235, 301, 334, 341, 403 or 441, and 434 or 436.

2. The minor for secondary teaching or junior college teaching is 23 units as follows: Speech 101 (not to be included as credit for minor), 138, 231, 235, 324 or 424, 334, 341 or 403, 434 or 436, and 442.

SPECIALIZED PREPARATION FOR THE TEACHING OF EXCEPTIONAL CHILDREN IN THE SPEECH AND HEARING AREA

Specialized preparation for the teaching of exceptional children in the speech and hearing area is a five-year program, is offered in lieu of a minor, and requires an academic major, which may appropriately be the program set forth above for the elementary teaching credential goal. The following are the programs for which the college is accredited and which it is authorized to offer in this field:

Completion of all of the general education requirements for the bachelor's degree: 50 units to include (a) Mathematics Educ 100A; (b) a year of English

Speech

and in addition competency in composition; (c) the requirement in United States Constitution; and (d) other course work as listed in this catalog.

This specialized preparation should include the following (courses with an asterisk (*) must be included):

- a. Educ 351, *Educ 471, *Speech 403, *Educ 431
- b. *Speech 341, *Speech 351, *Speech 441, *Speech 443, *Speech 404, *Psychology 341
- c. Select with adviser from Speech 451, Speech 452, Psychology 342, Speech 557A-H, Speech 563
- d. *Speech 461, *Speech 462, *Speech 463
- e. *Speech 458 and/or 558 (minimum of 135 clock hours over a period of three semesters), *Speech Educ 459 (minimum of 90 clock hours)
- f. The department offers the student two options: either of which fulfills the requirements for the credential. Option A will carry the recommendation of the School of Education. Option B is *not* designed to prepare the student for regular classroom teaching; therefore, the student following this option will not receive the recommendation of the School of Education for the standard teaching credential.

Students following Option A:

*Educ 301, Educ 311, Educ 331, and 90 clock hours of student teaching in a contained classroom.

Students following Option B:

*Educ 301 or Educ 406

*Psychology 311 or Educ 311

*Speech 451 and *Speech 452

MASTER OF ARTS IN SPEECH

General Characteristics

This degree, with concentrations in public address and speech pathology and audiology, is a coordinated program of graduate studies to provide incentive for intellectual growth, to contribute to improvement in teaching and professional recognition, and to provide a sound basis for continued graduate study in speech. The student is expected to demonstrate a high degree of intellectual and creative competence, to evaluate critically, and to show mastery of his field of concentration.

Prerequisites

In addition to the college requirements, students admitted to this program must possess at least 24 semester units of upper division studies in speech and background studies supporting the area of emphasis or both. A minimum of 18 semester units must be in or directly related to the area of emphasis. Students must also have completed the aptitude test of the Graduate Record Examination. To advance in the program, students must demonstrate oral proficiency and their effectiveness in graduate studies in the initial courses of the program.

Program of Studies:

The degree study plan will include at least 30 units of adviser-approved graduate studies, 15 units of which must be in 500-level courses. Each program will have at least 15 units in one of the areas of concentration; a core of six units, to include Speech 500 (Introduction to Graduate Study—taken very early in the program), and Speech 597 or 598 (Project or Thesis); and six units of adviser-approved supporting courses in related fields. Before the degree is granted, each student will pass an oral and written comprehensive examination.

See also "Steps in the Master's Degree Program," p. 70.

BUSINESS ADMINISTRATION AND ECONOMICS

SCHOOL OF BUSINESS ADMINISTRATION AND ECONOMICS

Dean: Donald S. Tull

Department of Accounting

Professors: Hirsch, Wiseman (chairman)

Associate Professors: Dennison, Woo

Assistant Professor: Corman

Lecturers: Hardman, O'Hearn

Department of Economics

Professor: Townshend-Zellner (chairman)

Associate Professors: Graves, Phillips, Pontney, Schick

Assistant Professors: Joun, Kasun, Lafky, Pickersgill, Thompson, Vinod, Voyadjis

Department of Finance

Professor: Kinney

Associate Professors: Lane, Nichols

Assistant Professors: Racster, Sharma

Department of Management

Professors: Barres (chairman), McCloud

Associate Professors: Goodell, McKee, Shaul, Trego

Assistant Professors: Babcock, Baillie, Colgan, Wiley

Department of Marketing

Professors: Forrest, Roberts (chairman), Smith, Tull*

Assistant Professor: Lange

Lecturer: Layden

Department of Quantitative Methods

Associate Professor: Rutemiller (acting chairman)

Assistant Professors: Beaton, Sastry, Vertinsky

Lecturer: Colman

THE UNDERGRADUATE PROGRAM IN BUSINESS ADMINISTRATION AND ECONOMICS

Through a study of the various theoretical and practical business policies and procedures, the School of Business Administration and Economics affords a basic education for managerial and professional positions in business, government, and education. Although emphasis is given to theory, factual content which is essential in specific vocations such as accounting, economics, finance, marketing, management, and business education is provided to enable students to enter apprenticeships in these fields with the expectation that their education should expedite their progress, either to managerial positions or to staff positions as professional accountants, economists, educators, and marketing and business consultants.

In our ever-expanding, complex society, the managers of tomorrow must be men and women with breadth of understanding and vision. Students who concentrate in a special area are encouraged to elect courses in other divisions of the college, particularly in the areas of the behavioral, social, and political sciences, and foreign languages. It is assumed that the first half of their college work toward a bachelor's degree represents a required basic education in communication, mathematics, a

* College administrative officer.

Business Administration

laboratory science, social science, and the humanities. With the broadening of our cultural and business horizons, it is desirable to become increasingly better versed in the language of our neighbors, Spanish, and in such languages as French, German, and Russian. Since the understanding of mathematics is becoming increasingly important in business and the social sciences, students who contemplate enrollment in either business administration or economics are encouraged to take four years of high school mathematics. College algebra, or three years of high school mathematics including a second course in algebra, will be a minimum prerequisite for entrance to the program.

If credits for either or both elementary accounting and principles of economics have not been earned, it will be necessary to enroll in these courses the first semester of the junior year.

Students enrolled in the school and working toward a college degree are subject to the general requirements of the college as to courses and credit hours required for graduation.

BACHELOR OF ARTS DEGREE IN BUSINESS ADMINISTRATION

The degree requirements are as follows:

- 1. Completion of a minimum of 50 semester credit hours in business administration and economics courses in the School of Business Administration and Economics, of which 35 semester credit hours must be upper division courses.
- 2. Completion of at least 15 semester credit hours in the School of Business Administration and Economics at the college.
- 3. Completion of the required core courses in the School of Business Administration and Economics. Students in business administration are required to take Mathematics 120 (Finite Mathematics) or equivalent as prerequisite to Quantitative Methods 361.
- 4. Completion of 12 semester credit hours of required courses in an area of concentration to be selected by the student.
- 5. Completion of at least 62 semester credit hours in areas other than business administration and economics.
- 6. Students must attain at least a 2.0 grade point average (C average) in all college work attempted, in all courses taken in the School of Business Administration and Economics, and in his area of concentration.

CORE: The business administration and economics courses listed below are required of all students majoring in business administration:

Course	Units
Economics 100 American Economic History.....	3
Economics 200 or 200A-B Principles of Economics.....	5-6
Quantitative Methods 264 Computer Programming.....	1
Accounting 201A-B, or 200 Elementary Accounting.....	6-5
Finance 330 Business Finance.....	3
Management 341 Principles of Management.....	3
Management 346 Business Law.....	3
Management 449 Seminar in Business Policies *.....	3
Marketing 351 Principles of Marketing.....	3
Quantitative Methods 361 Business and Economic Statistics.....	3

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AREAS OF CONCENTRATION FOR MAJORS IN BUSINESS ADMINISTRATION

A student in business administration should select an area of concentration by the second semester of the junior year and take the required courses in the area.

* Students taking business economics as their area of concentration will take Econ 401—Government and Business—in lieu of Mgmt 449—Business Policies.

Business Administration

Accounting	<i>Units</i>
301A-301B Intermediate Accounting	6
302 Cost Accounting	3
And at least one of the following courses:	
303 Governmental Accounting	3
308 Federal Income Tax	3
401 Advanced Accounting	3
402 Auditing	3
407 Integrated Data Processing Systems	3
Economics	
302 Intermediate Economic Analysis	3
303 Intermediate Economic Analysis	3
402 Monetary and Fiscal Policy	3
Management 446 Managerial Economics	3
Finance	
324 Money and Banking	3
331 Financial Analysis	3
And at least two of the following courses:	
335 Investment Principles and Practices	3
337 Real Estate Finance	3
431 Capital and Money Markets	3
433 Problems in Business Finance	3
Management	
342 Production Management	3
343 Personnel Management	3
444 Management of Systems	3
446 Managerial Economics	3
Marketing	
353 Marketing Administration	3
452 Marketing Research	3
459 Marketing Problems	3
A minimum of one of the following courses:	
307 Distribution Costs	3
354 Principles of Advertising	3
355 Credit and Credit Administration	3
356 Creative Motivation in Marketing	3
357 Industrial Purchasing	3
358 Physical Distribution	3
Quantitative Methods	
461 Advanced Statistics	3
At least three of the following courses:	
362 Introduction to Econometrics	3
364 Computer Logic and Programming	3
446 Computer Programming Theory	3
464 Computer Applications in Industry	3
465 Linear and Non-Linear Programming	3
467 Statistical Quality Control	3
Mktg. 452 Marketing Research	3
Mktg. 462 Advanced Econometrics	3

Business Education

BUSINESS EDUCATION

Students who wish to major in Business Administration in preparation for a career as a secondary school teacher in business subjects must meet the requirements of the School of Business Administration and Economics and the secondary school teacher education program including the requirements for the proper credential as outlined in the catalog.

The requirements for a major in this area are as follows:

1. The core requirements as set forth for all business administration majors, page 130.
2. Twelve hours of advanced work in one of the six areas of concentration:
 - a. Accounting
 - b. Economics
 - c. Finance
 - d. Management
 - e. Marketing
 - f. Quantitative methods
3. Completion of four to six credit hours of electives which may include secretarial studies* to meet the School of Business minimum requirement of 50 credit hours in business administration and economics courses.
4. A maximum of 12 credit hours in the secretarial field, including those applied as electives, may count toward the degree in business administration and economics.*
5. Completion of at least 62 credit hours in areas other than business administration and economics are required for the degree.

Education courses required for a credential will be detailed by the School of Education.

MASTER OF BUSINESS ADMINISTRATION

Applicants, as well as continuing students should read carefully the college requirements for master's degree programs, page 70.

Note: The School of Business Administration and Economics requires that a student include 6 units of 500-level coursework among the 12 units to be completed before advancement to candidacy.

The Programs for the M.B.A. Degree

The School of Business Administration and Economics offers two plans for the M.B.A. degree.

Plan I is a broad integrated program designed primarily for students with an undergraduate degree in a field other than business administration or economics. To insure breadth in the program, the student is not permitted to take more than nine units in any one functional area.

Plan II is an integrated program allowing some concentration in an area of specialization. Under this plan the student is required to complete 12 units in an area of concentration. It is designed primarily for students with baccalaureate degrees in business administration and economics.

The degree is earned by completion of 30 units in courses approved for graduate work of which not less than 15 units must be at the 500 course level with an overall grade-point average of not less than 3.0.

The M.B.A. degree can be achieved via three combinations:

- a. 30 units of coursework; or
- b. 27 units of coursework and an approved project; or
- c. 24 units of coursework and an approved thesis.

* The college does not offer work in secretarial training, typewriting, or business machines. Consult the dean of the School of Business Administration and Economics to arrange for transfer of approved courses to satisfy these requirements.

Business Administration

Candidates for the M.B.A. degree must complete the prescribed coursework, must satisfactorily pass a comprehensive examination and must receive the endorsement of the faculty of the School of Business Administration and Economics.

PLAN I

Prerequisites

Acceptance into the program requires the completion of the following prerequisites or equivalent with a grade-point average of not less than 2.5.

	Units
Math 120 Finite Mathematics <i>or</i>	
Math 250A Calculus	3
QM 264 Computer Programing	1
Acctg 300 Accounting Fundamentals	3
Econ 300 Basic Economics	3
Fin 330 Business Finance	3
Mgmt 341 Principles of Management	3
Mgmt 346 Business Law	3
Mktg 351 Principles of Marketing	3
QM 361 Business and Economic Statistics	3
Total	25

In addition, the student must take the admission test for graduate study in business before or during the first semester of residence.

CURRICULUM

The coursework required of all candidates (24 units) under this option is as follows:

Accounting

Required

500 Industrial Accounting	3
501 Administrative Accounting	3

Electives

407 Integrated Data Processing Systems	3
502 Seminar in Accounting Theory	3
504 Seminar in Contemporary Managerial Accounting Problems	3
Other 400- and 500-level accounting courses	

Economics

Required

403 Comparative Economic Systems	3
510 Competition, Monopoly, and Public Policy	3

Electives

511 Economic Problems and Public Policy	3
Other 400- and 500-level economics courses	

Finance

Required

532 Corporate Financial Management	3
--	---

Electives

533 Seminar in Financial Administration	3
534 Seminar in Financial Markets	3
Other 400- and 500-level finance courses	

Business Administration

Management

Units

Required

544 Organization Behavior, Theory, and Administration	3
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Electives

541 Seminar in Production Problems	3
542 Seminar in Labor Relations	3
543 Seminar in Personnel Administration	3
548 Seminar in International Management	3
549 Seminar in Policy Planning and Administration	3
Other courses at the 400 level that are approved	

Marketing

Required

551 Seminar in Marketing Problems	3
---	---

Electives

452 Marketing Research	3
552 Seminar in Pricing and Price Policy	3
553 Seminar in Product Planning	3
Other 400- and 500-level marketing courses (except Marketing 459)	

Quantitative Methods

Required

563 Statistical Decision Theory, <i>or</i>	
560 Operations Research	3

Electives

446 Computer Programming Theory	3
461 Advanced Statistics	3
464 Computer Applications in Industry	3
465 Linear and Non-Linear programming	3
565 Seminar on Computers in Industry	3
566 Design of Experiments	3
Other 400- and 500-level courses	

PLAN II

Prerequisites

Acceptance into the program requires the completion of the following prerequisites or equivalent with a grade-point average of not less than 2.5.

Math 120 Finite Mathematics <i>or</i>	
Math 250A Calculus	3
QM 264 Computer Programming	1
Acctg 201AB Accounting Principles	6
Econ 200AB Principles of Economics	6
Fin 330 Business Finance	3
Mgmt 341 Principles of Management	3
Mgmt 346 Business Law	3
Mktg 351 Principles of Marketing	3
QM 361 Business and Economics Statistics	3

Total	31
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In addition, the student must take the admission test for graduate study in business before or during the first semester of residence.

CURRICULUM

In addition to the prerequisites listed above, *each student will be held responsible to the department of his choice for the specialized background prescribed for that area of concentration.* The area of concentration shall be selected from accounting, finance, management, marketing and quantitative methods.

1. The required graduate core program in the Plan II M.B.A. shall be 15 to 18 units:

Acctg 500 Industrial Accounting, <i>or</i>	<i>Units</i>
Acctg 501 Administrative Accounting	3
Fin 532 Corporate Financial Management	3
Mgmt 544 Organizational Behavior, Theory, and Administration	3
Econ 403 Comparative Economic Systems, <i>or</i>	
Econ 510 Competition, Monopoly, and Public Policy	3
Mktg 551 Seminar in Marketing Problems	3
QM 463 Statistical Decision Theory, <i>or</i>	
QM 560 Operations Research	3

2. In addition to the graduate core, each student shall elect an area of concentration of at least 12 but not more than 15 units to be approved by an adviser, the department chairman concerned, and the graduate coordinator. See also "Steps in the Master's Degree Program," p. 70.

BACHELOR OF ARTS DEGREE IN ECONOMICS

The economics major is designed to prepare students for positions in business education, and government, and for graduate work in economics and related disciplines.

Required of all students for the degree:

1. Completion of 37 semester credit hours of courses in business administration and economics in the School of Business Administration and Economics, of which 24 semester credit hours must be in upper division courses.
2. Completion of at least 15 semester hours in the School of Business Administration and Economics at the college.
3. Completion of the major course requirements for economics majors, in the School of Business Administration and Economics. Students in economics are required to take Mathematics 120 (Finite Mathematics) or equivalent as prerequisite to Quantitative Methods 361.
4. Completion of at least 62 semester credit hours in areas other than business administration and economics.
5. Students must attain at least 2.0 grade-point average (C average) in all college work attempted, and in all courses in the School of Business Administration and Economics.

Business administration and economics courses required of all students majoring in economics are listed below:

Lower Division

Course	<i>Units</i>
Econ 100 American Economic History	3
Econ 200 or 200A-B Principles of Economics	5-6
Acctg 201A-B or 200 Elementary Accounting	6-5
Total	13-15

Economics

Upper Division

Course	Units
Econ 302 Intermediate Economic Analysis	3
Econ 303 Intermediate Economic Analysis	3
Econ 324 Money and Banking	3
Econ 401 Government and Business	3
Econ 402 Monetary and Fiscal Policy	3
QM 361 Business and Economic Statistics	3
Six hours of electives in the School of Business Administration and Economics approved by the student's major adviser	6
Total	24

MINOR IN ECONOMICS

A minor in economics may be achieved by taking the following courses:

Economics	Units
100 American Economic History	3
200 Principles of Economics	5
302 or 303 Intermediate Economic Analysis	3
401 Government and Business or 402 Monetary and Fiscal Policy	3
403 Comparative Economic Systems	3
Elective	3
Total	20

MASTER OF ARTS IN ECONOMICS

The master of arts in economics is a part-time, evening (and late-afternoon) degree program, designed especially for candidates who will be employed full or part-time while working for the M.A. degree.

The procedural steps for admission to, and completion of, the Master of Arts in economics degree follow.

Admission Requirements

1. Apply for admission to the college in unclassified graduate status and declare the objective to be a Master of Arts in economics degree. This must be accomplished at the Office of Admissions before the dates established in the college calendar.

2. Apply for admission to the Master of Arts in economics program. This must be accomplished at the Department of Economics and the Graduate Office after admission to the college, but before registration. Specific admission requirements include:

- An overall grade-point average in all undergraduate work of not less than 2.7.
- Competency in mathematics through fulfillment of *one* of the following: Courses in college algebra and calculus; completion of California State College at Fullerton courses QM 260 and QM 360 (or equivalent); satisfactory completion of a mathematics proficiency test developed by the Department of Economics, comprising mathematical applications in economics.
- Satisfactory level of performance in a written examination in economics.
- Satisfactory level of performance on the Graduate Record Examination (Verbal and Quantitative), aptitude only.
- Interview.

Prerequisites

Acceptance into the program requires the completion of the following pre-requisite courses, or equivalent:

1. *For students without an undergraduate major in economics* (a grade-point average of not less than 3.0 in the following prerequisites is required):

	Units
Principles of economics	6
Intermediate economic theory (micro)	3
Intermediate economic theory (macro)	3
Statistics (analytical)	3
Money and banking	3
Government and business	3
Monetary and fiscal policy	3
Total	24

2. *For students with an undergraduate major in economics:* 24 semester units of work in economics or related courses (e.g., statistics), with a minimum grade-point average of 3.0. The 24 units must include the following courses or their equivalent, with a minimum grade of 3.0 in each course: Intermediate economic theory (micro), Intermediate economic theory (macro), Statistics (analytic), Money and banking.

Program

1. A core of 12 graduate units in economics is required:

	Units
Economics 502, Advanced Microeconomic Analysis	3
Economics 503, Advanced Macroeconomic Analysis	3
Economics 505, Methodology in Economic Research	3
Economics 506, Seminar in Micro- and Macro-Economic Applications (<i>project</i> required)	3
Total	12

2. Electives*:

- a. Elect one graduate course in economics (other than the required core courses, and outside the quantitative field) 3
- b. Elect one upper-division or graduate-level course in quantitative or mathematical economics 3
- c. Elect two upper division or graduate level courses in fields *other than* economics, yet related to economics and approved as part of the student's integrated program 6
- d. Elect two upper division or graduate level courses both in economics or both in other related fields, or one in economics and one in other related fields 6

Total **18**

See also "Steps in the Master's Degree Program," p. 70.

* If nine or more units are taken in fields outside economics in elective areas c. and d., then three of these units must be at the graduate level.

EDUCATION

SCHOOL OF EDUCATION

Dean: Kenneth R. Doane

Professors: Brockmann, Carr, Coppolino, Croy, Denno,* Doane, Ehmann,* Hartsig, Imhoff, Johnson, Lake, McComb,* Pastor

Associate Professors: Barrett, Cusick, Donoghue, Fierman, Holmes, Kravitz, McGarry, Omalev, Preble, Sica, Smith

Assistant Professors: Albrecht, Bates, Fulton, Gould, Hanauer, Lance, Lemmon, McCullough, Schild, Schultz, Stark, Stovall, Yessis

Instructor: Witchev

The courses, programs, and services of the school are directed toward the following objectives of students:

1. Master of Science in Education with concentration in school administration, or school counseling
2. Preservice teacher education (elementary school, secondary school, junior college, mentally retarded)
3. In-service teacher education
4. Professional preparation of administrative and counseling personnel for the public schools
5. Program for the preparation of reading specialists
6. Major in physical education leading to the bachelor of science degree
7. The portion of the general education requirements in physical education and health

Instruction concentrates on the central principles of human behavior, human development, human learning, individual differences, physical activity, the school as a basic institution of our culture, the methods and materials associated with effective teaching, school administration, school counseling, and the current and persistent problems that confront administrators, teachers, counselors and other professional workers in educational institutions. In addition to using published source materials and attending class sessions for presentations and discussions, many of the school's courses require field work in schools and other educational agencies.

TEACHER EDUCATION CURRICULA

California State College at Fullerton is accredited by the California State Board of Education for programs leading to the following credentials:

1. Standard teaching credential with specialization in elementary school teaching
2. Standard teaching credential with specialization in secondary school teaching
3. Standard teaching credential with specialization in junior college teaching
4. Standard teaching credential with specialization, in lieu of minor, in the teaching of exceptional children in the area of mentally retarded children
5. Standard teaching credential with specialization, in lieu of minor, in the teaching of exceptional children in the area of speech and hearing handicapped children
6. Standard designated services credential with a specialization in pupil personnel services
7. Standard supervision credential.

* College administrative officer.

Education

The School of Education has administrative responsibility for teacher education. All curricula provide for completing the requirements for graduation with the bachelor of arts degree at the end of the usual four collegiate years and an additional year of work to satisfy requirements for a teaching credential. Preparation for teaching in a junior college requires the master's degree. Details of the programs are provided in special brochures available from the School of Education or the Credentials Office. Information about the professional services authorized by the above credentials will be provided by professional advisers or the Credentials Office.

CURRICULUM IN ELEMENTARY SCHOOL TEACHER EDUCATION *

The program leading to the recommendation for the standard teaching credential with specialization in elementary school teaching includes the following:

1. A bachelor's degree from an approved institution.
2. A fifth year of college or university postgraduate education taken at the upper division or graduate level. (If the student does not complete all requirements, the credential may be awarded on the basis of partial fulfillment at the end of four or more years of work if he has a bachelor's degree from an approved institution, has an approved major, and has completed the student teaching requirement.)
3. A minimum of 45 semester hours in five of the following six areas: (1) social sciences, (2) natural sciences, (3) humanities (excluding foreign languages), (4) fine arts, (5) mathematics, and (6) foreign languages. The humanities requirement must include a year of English, and, a course in composition. Eng 101 and Eng 102 and an additional course in English meet this requirement. (To prepare himself to meet professional responsibilities, an elementary school teacher education candidate should include in his program Art 100, Music 101, PE 123, PE 149, and Speech 101 or Speech 231.) These 45 semester hours of coursework for the credential can be met through the college general education requirements for the bachelor's degree with the proper selection of courses. (Not more than six hours of coursework taken to satisfy these requirements shall apply toward the fulfillment of the requirements for either a major or a minor.)
4. Three semester hours of coursework in the theory of the structure, arithmetic and algebra, of the number system or three semester hours of coursework in calculus. (Math Education 100A meets this requirement.)
5. One of the following:
 - a. A major consisting of at least 24 semester hours of upper division or graduate level courses in an academic subject matter area commonly taught in the public elementary schools. These majors are currently available for this specialization at the college: anthropology, art, biological science, chemistry, comparative literature, drama, economics, English, French, geography, German, history, linguistics, mathematics, music, philosophy, physics, political science, psychology, sociology, Spanish, speech. (Note: the specifications above are state minima, and do not necessarily satisfy requirements for a major for graduation from the college.)
 - b. A major and a minor, each of which is in a subject matter area commonly taught in the public elementary schools, and one of which is in an academic subject matter area. The academic major shall consist of at least 24 semester hours of upper division or graduate coursework. If the major is not an academic one, it shall consist of 28 semester hours of upper division or graduate coursework. (With a nonacademic major, i.e., business administration, physical education, communications with journalism emphasis,

* Regulations for the credential are subject to change by the State Board of Education; any curricular changes will be available in later college publications.

only the major and minor subjects may be taught in kindergarten and grades 1 through 9.) This minor shall consist of a minimum of 20 semester hours of coursework. When the major is in an academic subject matter area specialized preparation in such areas as mentally retarded or speech and hearing handicapped may be substituted.

- c. Two minors in subject matter areas commonly taught in the public elementary schools and a major, other than education and educational methodology, not commonly taught therein. If the major is not in an academic subject matter area, each minor shall be in an academic subject matter area. If the major is in an academic subject matter area, one of the minors shall be in an academic subject matter area. These minors shall consist of a minimum of 12 semester hours of coursework. Specialized preparation in such areas as mentally retarded or speech and hearing handicapped may be substituted for one of the minors.
6. Courses selected from the following ones offered by academic departments as part of the basic preparation for elementary teachers. A minimum of three courses, selected with the approval of a professional adviser, must be completed before student teaching.

Art 380 Art and Child Development (3 units)

English 433 Children's Literature (3 units)

Math Educ 100B Fundamental Concepts of Mathematics (3 units)

Music 333 Music and Child Development (3 units)

PE 333 Physical Education and Human Development (3 units)

Sci Educ 310 Elementary Experimental Science (3 units)

7. Professional education requirements which are currently met by the following program:

Educ 311 Psychological Foundations of Education (4 units)

Educ 331 Elementary School Principles, Curricula, and Methods (8 units)

Educ 339 or 739 Student Teaching in the Elementary School (8 units)

Educ 401 Social, Historical, and Philosophical Foundations of Education (4 units)

COMPOSITE LOWER DIVISION, UPPER DIVISION, AND FIFTH YEAR WORK

A student seeking recommendation for the standard teaching credential with specialization in elementary school teaching after five years of preservice teacher education should complete—

In the lower and upper division:

- a. Coursework listed in 3, 4, and 5 above.
- b. A minimum of three courses from item 6 above. These courses are to be selected in consultation with and with the approval of his professional adviser.
- c. Courses in professional education
Junior year, Education 311 (4)
Senior year, second semester, Education 331 (8)
- d. Additional courses selected in consultation with his professional adviser.

In the fifth year:

- a. Courses in professional education
First semester, Education 739 (8)
Second semester, Education 401 (4)
- b. Additional courses from item 6 above as needed and other courses selected in consultation with his professional adviser.

Education

(The applicant for the standard teaching credential with specialization in elementary school teaching must complete 30 units of upper division and/or graduate work after he has completed all requirements for the bachelor's degree.)

A student seeking recommendation for the standard teaching credential with specialization in elementary school teaching on partial fulfillment of requirements should complete—

In the lower and upper division:

- a. Coursework listed in 3, 4, and 5 above.
- b. A minimum of three courses from item 6 above. These courses are to be selected in consultation with and with the approval of his professional adviser.
- c. Courses in professional education
Junior year, Education 311 (4)
Senior year, first semester, Education 331 (8)
Senior year, second semester, Education 339 (8)
- d. Additional courses selected in consultation with his professional adviser

In the fifth year (to be completed during the first seven years of teaching):

- a. Courses in professional education
Education 401 (4)
- b. Additional courses from item 6 above as needed and other courses selected in consultation with his professional adviser.

(The applicant for the standard teaching credential with specialization in elementary school teaching must complete 30 units of upper division and/or graduate work after he has completed all requirements for the bachelor's degree.)

CURRICULUM IN SECONDARY SCHOOL TEACHER EDUCATION *

Composite of Requirements in Lower Division, Upper Division, and Graduate Work Leading to the Standard Teaching Credential With Specialization in Secondary School Teaching

Credential requirements and the program leading to the recommendation for the standard teaching credential with specialization in secondary school teaching includes the following:

1. A bachelor's degree from an approved institution.
2. A fifth year of college or university postgraduate education taken at the upper division or graduate level. (The postgraduate year is defined by California State College at Fullerton as 30 semester units of upper division or graduate level coursework.)
3. Forty-five semester hours of coursework, including the English and the competency described below, and including *four* of the following six areas: (1) humanities (excluding foreign languages), (2) social sciences, (3) natural sciences, (4) mathematics requiring as a prerequisite an understanding and knowledge of high school algebra and geometry, (5) fine arts, and (6) foreign languages. The humanities requirement must include a year of English, and in addition, the applicant for the credential shall demonstrate competence in composition either by passing a course in composition or by passing an examination in lieu thereof. (Note: The English requirement including competence

* This is the curriculum for the standard teaching credential with specialization in secondary school teaching. Credential requirements are subject to regulatory changes. Any such changes will be described in later college publications.

in composition is met at this college by English 101, Composition and World Literature; English 102, World Literature and Composition (or the equivalents of these two courses), and an additional course in English. This 45 semester hours of coursework for the credential can be met through the college general education requirement for the bachelor's degree with proper selection of courses. Not more than six hours of coursework taken to satisfy these requirements shall apply toward the major or minor for the credential.)

4. Preparation in subject matter areas commonly taught in the public secondary schools for the purpose of *credential* requirements for majors and minors.

a. One of the following:

Option 1. A major in an academic subject matter area commonly taught in the public secondary schools.

Option 2. A major and a minor, each of which is in a subject matter area commonly taught in the public high schools, and one of which is in an academic subject matter area.

b. Major requirements for the credential must include at least 24 upper division and graduate level units. At least six units in the major must be taken at the graduate level. Six postgraduate units in the minor may be taken in lieu of this requirement for the major. See the *general course numbering code* on page 168 for the description of graduate level courses for the credential. Also see the appropriate sections of this catalog for descriptions of requirements in specific majors. The college will recognize single subject areas as satisfying Option 1 provided the student supplies additional upper division or graduate units in supporting areas structured by the department in which the baccalaureate degree is taken and in consultation with the other departments involved. This option should be considered carefully, since it may not be practical in terms of job placement. Some departments of the college will require that the student must present a minor. Students must consult with academic and professional advisers concerning Option 1.

c. Minor requirements vary, but must include 20 units in a single subject in this credential program at CSCF. (Note: A minor is not required for graduation from the college but is required for the recommendation of the college for Option 2.)

Each student will complete a major planned with and approved by his major adviser. Majors presently available are: art, biology, business administration, chemistry, communications with journalism emphasis, drama, economics, English, French, geography, German, history, mathematics, music, physical education, physics, political science, Spanish, and speech.

Each student will complete a minor planned with and approved by his professional adviser. Minors presently available are: art, biology, communications with journalism emphasis, drama, economics, English, French, geography, German, history, mathematics, music, physical education, physics, political science, Spanish and speech. Students may also present specialized preparation to serve as a teacher of exceptional children in the area of the mentally retarded or speech and hearing handicapped in lieu of the minor.

Students majoring in business administration, communications with a journalism emphasis, and physical education must have an academic minor with a minimum of 20 units in subjects commonly taught in the public secondary schools. Students with these majors must complete 12 units of upper division or graduate level work in the minor area.

5. Credential requirements in courses for preservice professional education are met in the following program in professional education:

Education

COURSES IN PROFESSIONAL EDUCATION

	<i>Units</i>
Educ 340 Principles and Curricula of Secondary Education.....	3
Educ 401 Sociological, Historical, and Philosophical Foundations of Education.....	4
Educ 311 Psychological Foundations of Education.....	4
Educ 442 Teaching (art, English, etc.) in the Secondary Schools (also listed in respective departments).....	3
Educ 449 Field Work in Methods of Teaching in Secondary Schools.....	1
Educ 749 Student Teaching (art, English, etc.) in the Secondary School and Seminar (also listed in respective departments).....	6

Students normally will begin their work in professional education in the junior year, and it is expected that, except for Education 301, the courses above will be taken in the indicated sequence. Students who begin their work in professional education as seniors or as graduate students will follow a somewhat different sequence, and should consult professional advisers when planning their programs. Graduate students without professional education backgrounds may be required to extend their program beyond a single academic year to complete the college secondary school teacher education program. In all cases students are required to take Education 340 the first semester they are enrolled in professional education.

NOTE: Admission to the college does not include admission to the secondary school teacher education program. See the description on page 149 for the procedures for *admission to teacher education* which does include admission to this credential program. It is the responsibility of each student to file his application for *admission to teacher education* by the end of the semester in which he completes Education 340. It is also the responsibility of each student to arrange to complete his requirements for *admission to teacher education* early in his work in professional education. Students must be admitted to teacher education prior to taking Education 442 and Education 449.

Admission to teacher education does not include *admission to student teaching*. See the description of the procedures for *admission to student teaching* on page 150. The student must observe the deadline and must meet other requirements for *admission to student teaching*.

CURRICULUM IN JUNIOR COLLEGE TEACHER EDUCATION

The program requirements leading to the college-recommended standard teaching credential with a specialization in junior college teaching are:

1. A master's or higher degree from CSCF or from an accredited institution.
2. Preparation in subject matter areas commonly taught in public junior colleges in either of the following:
 - a. An academic major in a single subject commonly taught in public junior college. (The subject in which a master's degree has been granted constitutes a major in that subject for these purposes.)
 - b. If the major is nonacademic (the candidate holds a master's degree in a subject such as business administration, physical education, or journalism), the candidate must have an academic minor of a minimum of 20 semester hours in a single subject commonly taught in the public junior college. Twelve of the units in the minor must be of upper division or graduate level.
3. Professional education requirements in CSCF recommended program:

	<i>Units</i>
Educ 744 Principles of Junior College Teaching.....	3
Educ 799 Junior College Student Teaching and Seminar.....	4

ADMISSION TO JUNIOR COLLEGE TEACHER EDUCATION PROGRAM

Admission to the college does not constitute admission to junior college teacher education.

The candidate must:

Have a master's or higher degree from a fully accredited institution in a field in which the college offers a major

or

have classified graduate status (master's degree candidacy) at CSCF and possess a baccalaureate degree.

Admission to junior college teacher education follows in general the procedure described on page 143. For exact procedures see Credentials Office.

The student is responsible for filing his application for admission as early as possible and is also responsible for admission to teacher education.

Application for junior college student teaching and seminar is not included in admission to the program. The student is responsible for following the procedures listed on page 150 under "Application for Student Teaching."

The courses in professional education listed above will be taken in sequence. The student must have postgraduate standing before he enrolls in these courses. Student teaching may be taken in either the last semester in which the master's degree will be completed or after the degree has been granted.

N.B.: The above is a description of the program leading to the recommendation of the college for the credential. This program includes student teaching and work in professional education not required by the state. The college program is designed to meet the job placement needs of candidates for positions in junior colleges.

SPECIAL EDUCATION

CURRICULUM IN PREPARATION OF TEACHERS OF THE MENTALLY RETARDED

Students preparing to become teachers of the mentally retarded must complete the curriculum in either elementary or secondary school teacher education as described on pages 142 and 144. When the major is in an academic area commonly taught in the elementary or secondary schools (as appropriate), the 22 units of specialized preparation described below (not including student teaching) may be substituted for the minor. On successful completion of the program the student will be recommended for the standard teaching credential with specialization in elementary or secondary teaching with specialized preparation to serve as a teacher of exceptional children, area of the mentally retarded. Upon receipt of this credential, the student will be authorized to teach in special classes for the mentally retarded as well as in regular classes at the appropriate level.

Students desiring to prepare as teachers of the mentally retarded should proceed as follows:

1. Apply for admission to teacher education as described on page 149.
2. File the "Application to Enter the Program for Specialization in the Teaching of Mentally Retarded Pupils" at the same time as application is made to be admitted to teacher education. (Application forms are available from the School of Education.)
3. Arrange for a personal interview with a faculty member involved in the program. This faculty member will advise the student about the appropriate sequence of courses.
4. Upon completion of the necessary prerequisite courses, apply for admission to student teaching as described on page 150. Students in this specialized program will have their student teaching assignment divided between regular classes and special classes.

Special Education

Students seeking recommendations for this special credential to teach the mentally retarded should complete the courses listed below in lieu of the minor required for the Standard Teaching Credential.

	<i>Units</i>
Educ 471 Exceptional Children	3
Educ 473 Mental Retardation: Educational Development	3
Educ 474 Curriculum and Methods for Teaching the Mentally Retarded	3
Educ 475 Observation and Individual Instruction with the Mentally Retarded	3
Educ 779 Student Teaching with Mentally Retarded Pupils	4
Educ 351 Principles of Guidance	3
Speech 403 Speech Development	3
Electives from courses related to teaching the mentally retarded (4 units); electives must be approved by the adviser	—
Total number of units in special education not including student teaching	22

RECOMMENDED SEQUENCE OF COURSES IN PROFESSIONAL EDUCATION FOR STUDENTS PREPARING AS TEACHERS OF THE MENTALLY RETARDED

	Elementary	Secondary
Junior year, first semester	Educ 311 (4)	Educ 311 (4)
Junior year, second semester	Educ 471 (3)	Educ 471 (3)
		Educ 340 (3)
Senior year, first semester	Educ 331 (8)	Educ 442 (3)
	Educ 473 (3)	Educ 473 (3)
Senior year, second semester	Educ 474 (3)	Educ 474 (3)
		Educ 401 (4)
Fifth year, first semester	Educ 475 (3)	Educ 475 (3)
	Speech 403 (3)	Speech 403 (3)
	Electives in special education (4)	Electives in special education (4)
	Educ 401 (4)	
Fifth year, second semester	Educ 779 (4)	Educ 779 (4)
	Educ 739 (4)	Educ 749 (2)
	Educ 351 (3)	Educ 351 (3)

CURRICULUM IN PREPARATION OF READING AND REMEDIAL READING SPECIALISTS

Teachers who wish to enter the program for the preparation of specialists in reading and remedial reading, including both primary and secondary school levels, may enroll in the following 18-unit specialty:

SEQUENCE OF COURSES IN READING

	<i>Units</i>
Educ 506 Curriculum and Research: Reading	3
Educ 516 Etiology of Learning Disorders: Reading	3
Educ 581 Analysis of Reading Difficulties	3
Educ 582 Analysis of Reading Practices	3
Educ 583A Remedial Reading: Casework	3
Educ 583B Remedial Reading: Casework	3

Completion of the reading sequence will entitle the student to a statement of completion of the reading specialty.

CURRICULUM IN PREPARATION OF TEACHERS OF SPEECH AND HEARING HANDICAPPED

Details of this teacher education program are found on page 125. The program is administered by the Speech Department in consultation with the School of Education.

STATUTORY REQUIREMENTS FOR CREDENTIALS FOR TEACHING

The curricular requirements for credentials for teaching in California elementary schools and secondary schools are included in the above curricula. In addition, an applicant for a credential for teaching is asked questions about his citizenship, and about his ethical and moral character. The applicant must sign an oath of allegiance, must present a certificate of health from a qualified physician, and present official transcripts of collegiate studies. The applicant must present two sets of personal identification cards, including fingerprints. He must present evidence of having passed a course or suitable examination on the United States Constitution. Each application for a credential costs \$10.

PERSONNEL SERVICES FOR TEACHER EDUCATION STUDENTS

Advisement is available to any student seeking a public school credential and a bachelor of arts degree. Before registration, the student should consult an adviser in the department in which he expects to major and an adviser in the School of Education who will help him select courses and build his program. A student from another institution should bring transcripts of previous work and a tentative selection of courses. Each student is responsible for meeting all requirements set forth in the catalog and supplements.

During the first semester after enrollment, a student seeking a bachelors degree will receive an evaluation of his credits from the college Office of Admissions. If a student changes his degree or credential objective, he must have an evaluation for each new credential. The evaluation will serve as a guide for the student and the advisers in planning a complete program. Any deviation from this evaluation must be approved through written petitions submitted to the dean of the School of Education. Transferred education courses must be of upper division level and taken within the past 15 years to be applicable to upper division credential requirements.*

ADMISSION TO TEACHER EDUCATION

To become a candidate for a teaching credential the student must be enrolled, in good standing, and must be admitted to "teacher education" in the Office of Admissions and Advisement of the School of Education. Application for admission to teacher education should be filed during the first semester of the junior year or the first semester of attendance at the college, if the student enters with advanced standing.

Admission to teacher education is required of each student before he files the application for student teaching.†

A faculty committee will review information concerning the applicant's intellectual resources and mastery of important concepts in the common curricular areas of higher education, command of fundamental skills of communication

* Selected courses completed in lower division at institutions outside of the State of California may be applied to professional education credential requirements.

† Exceptions will be made in the case of new transfer students.

Application for Student Teaching

(English language usage, written composition, speech, hearing, reading comprehension, handwriting, mathematical skills), scholarship, personality and character, interest in teaching, and health. Data related to these criteria are gathered from transcripts and records from other schools and colleges, group and individual tests, personality inventories, estimates of the potential of the applicant, and from the Student Health Center. Students should normally qualify for admission and be advised of their status during the second semester of the junior year or their first semester of attendance if they enter with advanced standing with degrees from accredited colleges.

Students who show weaknesses in any of the fundamental skills of communication are advised of their standing. If there are weaknesses in only one or two of the areas noted above, the student will be advised of refresher courses and given a specified time to meet the standard.

If the applicant has serious deficiencies in communication skills or does not meet the standards of mastery in the common curricular areas, personality and character, scholarship, interest in teaching, or health, the faculty committee will deny admission to teacher education.

The student must arrange to take the required battery of group and individual tests and inventories necessary to provide information needed by the faculty committee. The tests of breadth of understanding, reading, English usage, number skills, composition, handwriting, and personality are given by the School of Education for admission to teacher education; consult the Office of Admissions and Advisement of the School of Education for dates.

The student who comes to CSCF to work toward a credential for teaching in a secondary school and who already has a bachelor's degree must, before he is admitted to teacher education, consult with an adviser in the major and must submit a statement, signed by the adviser, which indicates the following:

1. That the student's undergraduate preparation in his major is considered to be adequate for the credential sought, or
2. Specific courses which the student must complete to have a major adequate for the credential sought, and which he must complete before he will be admitted to student teaching. These may be in addition to the minimum of the six upper-division or graduate units required in the major in the postgraduate year, or may, in part or in whole, satisfy this six unit minimum requirement.

Full details on standards and procedures for admission to teacher education are described in "Instructions and Standards for Admission to Teacher Education," which is available from the Office of Admissions and Advisement, School of Education.

APPLICATION FOR STUDENT TEACHING

Admission to teacher education as described above is the first step in a cumulative and continuing evaluation of a candidate's fitness to teach. The applicant for admission to student teaching must have a grade-point average of 2.5 in the major, 2.5 in the minor, and 2.5 in professional education. Marks of C, or better, are required in all professional education courses. Applicants for admission to elementary school student teaching must be classified as postgraduate students or be within 15 units of the baccalaureate degree. Applicants for admission to secondary school student teaching or to junior college student teaching must be classified as postgraduate students. All applicants must have completed at least 12 units at California State College at Fullerton. The applicant must present a favorable report on health status and history. He must present evidence of readiness for student teaching responsibility as testified by the major adviser, the professional adviser, and other

college faculty. This evidence relates to scholarship, breadth of understanding, command of the subjects to be taught, fundamental skills of communication, personality and character, interest and potential for teaching, and health.

Competence is required in all subjects and skills for which the candidate is seeking a credential. For the elementary school teacher education student, this includes all subjects and skills commonly taught in the first eight grades of the public schools. Secondary school and junior college teacher education students must meet the requirements for major and minor(s) as specified by the academic divisions.

All instructors of the college are asked to participate in the continuing evaluation of students in relation to those aptitude, personality and character traits which are considered essential to admission to the teaching profession. Dependability in fulfilling assignments, class attendance, ability to get along with people, industry, and emotional stability are representative criteria. In addition to the evaluations by instructors, the applicants may be interviewed by a faculty committee, and attention will be directed to general appearance, dress, vitality, poise, temperament, integrity, and social attitudes.

The application for admission to student teaching is submitted to the coordinator of elementary education or the coordinator of secondary education. The application must be submitted by October 15 or March 1 of the semester preceding the semester in which the student teaching assignment is expected. A faculty committee will gather the information described above and report to the student in time to do planning for the following semester.

Except for graduate students who are in their first semester of study at CSCF, applications will be accepted only from those who have completed all requirements for admission to teacher education.

Full details on standards and procedures are described in "Instructions and Standards for Admission to Student Teaching," available in the Office of Elementary and Secondary Education.

STUDENT TEACHING

Each candidate for the standard teaching credential with specialization in elementary school teaching will do his student teaching in the last semester he is in the teacher education curriculum or in his postgraduate year at the college. Each candidate for the standard teaching credential with specialization in secondary school teaching, or for the standard teaching credential with specialization in junior college teaching will do his student teaching during a postgraduate year. Details about student teaching in special education classes are available in the Office of Elementary and Secondary Education. Student teaching assignments are made in the elementary and secondary schools of districts geographically accessible to the college. Junior college student teaching assignments are made in nearby junior colleges. Students will be assigned to work under the supervision of carefully selected supervising teachers; a college supervisor makes frequent visits to the student teacher and the supervising teacher. Student teachers meet in a weekly seminar under the leadership of the college supervisor to discuss performance and problems.

STUDY LIMITS OF STUDENT TEACHERS

Students who enroll in Educ 339 or 739, Student Teaching in the Elementary School, will be limited to one additional course for that semester. Students who enroll in Educ 749, Student Teaching in the Secondary School, will be limited to two additional courses for that semester. It is expected that students

Permission to Substitute Experience

will not carry out-of-college work responsibilities during the semester of the student teaching assignment.

If a student is under hardship because of these limitations, he may submit a petition to the coordinator of elementary education or to the coordinator of secondary education, as appropriate, requesting permission to carry not more than 13 units, including student teaching. The petition must set forth, in full, the circumstances necessitating the petition.

PERMISSION TO SUBSTITUTE TEACHING EXPERIENCE FOR STUDENT TEACHING

A candidate for a teaching credential who has had two years of successful, regular teaching experience must petition the School of Education, through his professional adviser, for permission to substitute such experience for the student teaching requirement. Substitution of teaching experience for student teaching will be considered only if the applicant:

1. Has been admitted to teacher education at the college.
2. Has submitted an official verification from his former supervisor, principal, or superintendent to the School of Education certifying at least two years of successful, regular teaching experience at the appropriate level. A form for this verification is available in the Office of the School of Education.

OTHER CREDENTIAL PROGRAMS

Administration and Supervision

Students must take Educ 503, Foundations for Educational Leadership, during their first registration in these fields. To continue in the program beyond this course, the student must be granted a "letter of admission to the program" and possess an official CSCF program evaluation. The program is an integrated whole. Thus, students who desire only isolated courses from the program are normally denied admission to such courses. Details of this program are contained in a brochure available from the School of Education.

Pupil Personnel Services

Students must take Educ 550, Counseling Theories and Processes (prerequisite: Educ 351, Principles of Guidance) during their first registration in this field. To continue in the program beyond this course, the student must be granted a "letter of admission to the program" and possess an official CSCF program evaluation. Details of this program are contained in a brochure available from the School of Education.

PUBLICATIONS AVAILABLE FROM THE SCHOOL OF EDUCATION

1. Master of Science in Education with concentration in school administration and school counseling.
2. Principles underlying preservice teacher education at California State College.
3. Admission to teacher education standards, instructions, application.
4. Admission to student teaching standards, instructions, application.
5. Program in elementary school teacher education.
6. Program in secondary school teacher education.
7. Program in junior college teacher education.
8. Program in teaching mentally retarded children.
9. Program in teaching children with speech and hearing handicaps.
10. Program in school administration and supervision.
11. Program in pupil personnel services.
12. Program for specialists in reading.

MASTER OF SCIENCE IN EDUCATION

General Characteristics

This degree is reserved for professionally qualified graduate students who desire to prepare for or advance their careers in *school counseling*, *school administration*, or *special education*. Most students in school counseling and administration can meet credential requirements in either Pupil Personnel Services or Administration (including supervision) while completing the degree.

Prerequisites

Only students who have a teaching credential, successful teaching experience, an approved academic major, acceptable scores on the Graduate Record Examination (area tests), 30 units of adviser-approved study past the baccalaureate degree, a 2.5 GPA on previous academic and related work, and who have been screened into the program on these and professional leadership criteria, may proceed to the last 30 units of study on the program. Credit will be given for previous post-baccalaureate studies when possible. While otherwise well-qualified students may be admitted with limited subject or grade deficiencies, these may often be removed in the first 30 units of postbaccalaureate study.

Program of Study

Students concentrating in *school counseling* will take Educ 550, Counseling Theories and Processes (prerequisite: Educ 351, Principles of Guidance), and in *school administration* will take Educ 503, Foundations for Educational Leadership, as soon as they identify their interest in this M.S. degree. Students in *special education* will take Educ 514, Graduate Seminar: Behavioral Research on Children With Learning Disorders, early in their program. Detailed evaluations and M.S. study plans will be developed for each student at this time.

The final adviser-approved 30 units (minimum) of study for the degree will include the course of the above paragraph, 6 units of degree "core" studies (in survey of educational research, and social, historical or philosophical aspects of education), 6 units of adviser-approved supporting courses from other disciplines, and an added 16 units in the area of concentration. The latter will include a culminating project, designed to assure depth of scholarship and integration of elements of the program.

The 16 additional units in the concentration in school administration (referred to above) are as follows:

	Units
Educ 505 Foundations for Improving Instruction.....	4
Educ 561 Organization of School Systems.....	3
Educ 563 Principles of School Personnel Administration.....	2
Educ 567A,B Field Work and Seminar in School Administration.....	2, 2

One of the following:

Educ 566 The Elementary School Principal and Supervisor.....	3
Educ 586 The Secondary School Principal and Supervisor.....	3

The 16 additional units in the concentration in school counseling (referred to above) are as follows:

	Units
Educ 551 Educational and Career Orientation.....	3
Educ 552 Group Processes in Guidance.....	3
Educ 553 Administration and Organization of Pupil Personnel Services.....	3
Educ 557A,B Seminar in School Counseling.....	1, 1
Educ 559A,B Field Work in Pupil Personnel Services.....	2-3

Other Credential Programs

The additional units in the concentration in special education (referred to above) are to be selected from the following with approval of the adviser.

	Units
Educ 570 Graduate Clinic in Exceptional Children: Advanced Developmental Psychology	3
Educ 571 Graduate Clinic in Exceptional Children: Advanced Psychology of Learning	3
Educ 481 Analysis of Reading Difficulties	3
Educ 555 Individual Diagnosis	3
Educ 599 Graduate Project or Thesis: Special Education	1-3
Educ 503 Foundations for Educational Leadership	3
Educ 552 Group Processes in Guidance	3
Educ 514 Graduate Seminar: Behavioral Research on Children with Learning Disorders	3
Educ 519 Supervision of Student Teachers	3

Also see "Steps in the Master's Degree Program," beginning on p. 70.

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

The department offers a bachelor of science in physical education for students preparing to teach, for those preparing to pursue graduate work in physical education and for those preparing for careers in business, industry and government service.

The major consists of 40 units in health education, physical education and recreation, and six units of electives in upper division in supporting and related fields. Electives are to be approved by the students' departmental adviser. Requirements for the major, including proficiency requirements, prerequisite and lower division courses, are indicated below.

Proficiency Requirements for Major Students

All physical education majors must demonstrate proficiency in the areas of aquatics, rhythms, gymnastics, combatives (men), modern dance (women) and in individual and team sports. Intensive skill courses in these areas should be taken in the lower division. All major students must attain satisfactory proficiency in all categories listed below in any one of the following ways:

1. Complete course with grade of C or better.
2. Pass proficiency screening test as administered by the course instructor.

PROFICIENCY SERIES

Aquatics: PE 111M, PE 111W, PE 112, PE 113 (select one)

Combatives: PE 132M Combatives (M)

Rhythms: PE 141 or PE 142, PE 143 (W), PE 144 (W)

Gymnastics: PE 131M or PE 131W, PE 151

Individual sports: PE 130, PE 136, PE 137, PE 139, PE 138 or PE 135, PE 150, PE 157

Team sports*: PE 121M and 122M, PE 121W and 122W

* Two semesters of team sport competition on an intercollegiate team may be taken in lieu of team sports requirement (applies to both men and women).

MAJOR IN PHYSICAL EDUCATION

Prerequisites		Units
Chemistry 100	Introductory Chemistry.....	5
Biology 100	Principles of Biology.....	2
Biology 160	Principles of Zoology.....	3
Biology 361	Mammalian Anatomy and Physiology.....	4
Physics 211A	Elementary Physics.....	4
Total		18
Electives: Interdisciplinary		
Six units of electives in upper division in supporting or related fields. Electives will be approved by the student's departmental adviser.....		6
Total		6
Courses in Health, Physical Education and Recreation		
Lower Division (all required)		
HE 101	Personal and Community Health.....	2
HE 102	Prevention and First Aid.....	2
PE 201	Introduction to Physical Education and Recreation.....	3
Rec 203	Recreation Programs and Activities.....	2
Total		9
Upper Division (all required)		
PE 324	Theory and Principles of Human Motor Learning.....	3
PE 325	Case Studies in Human Motor Learning.....	3
PE 416	Kinesiology (pre/Bio 361).....	3
PE 417	Physiology of Exercise (pre/Bio 361).....	3
PE 418	Adapted and Corrective Activities (pre/PE 416).....	3
HE 419	Environmental Health (pre/HE 101).....	3
PE 420	Tests and Measurements in Physical Education.....	3
Total		21
Upper Division (any five courses) †		
PE 311	Analysis of Aquatics.....	2
PE 312	Analysis of Combatives.....	2
PE 313	Analysis of Folk, Square, and Social Dance.....	2
PE 314	Analysis of Individual and Dual Sports.....	2
PE 315	Analysis of Modern Dance (W).....	2
PE 317A,B	Analysis of Team Sports (W).....	4
PE 318	Analysis of Team Sports (M).....	2
PE 319	Analysis of Gymnastics and Tumbling.....	2
Total		10
Total in health, physical education and recreation.....		40

† Students must have completed the proficiency skills test essential to the course as a prerequisite to enrollment in any of the courses listed in the series PE 311-319.

Other Credential Programs

MINOR IN PHYSICAL EDUCATION

A minor consists of 22 units of work as listed below:

Lower Division: HE 102, PE 201, Rec. 203.

Upper Division: PE 324, PE 416 or PE 417, PE 419 or PE 420 and select any *three* courses (6 units) from the analysis series: †
PE 311, 312, 313, 314, 315, 317A, 317B, 318, 319.

For information about teaching credentials, consult the Credentials Office or the chairman of the department.

ENGINEERING



SCHOOL OF ENGINEERING

Dean: Robert G. Valpey

Professors: El Saden, Hunt, Valpey

Assistant Professor: Chiang

COURSES IN ENGINEERING

The School of Engineering offers programs at the undergraduate and graduate level. The individual courses are described in the section of this catalog on announcement of courses. At the undergraduate level, the school prescribes certain patterns of courses, combined with those of other academic departments and schools of the college, as a program of 136 semester units leading to the bachelor of science in engineering. At the graduate level, the school offers a sequence of courses as a program of 30 semester units leading to the master of science in engineering. In both the undergraduate and graduate programs specific options in major fields are offered.

BACHELOR OF SCIENCE DEGREE IN ENGINEERING

The heart of the engineering program is a core curriculum somewhat broader than that of the traditional engineering program. This core includes courses in mathematics, physics, chemistry, basic engineering sciences, and the humanities, and provides a firm basis for more specialized knowledge at an advanced level. Beyond the basic core, the student may choose topics in one of the major subject options listed below. A minimum of 32 hours of study will constitute a major option. During his first 2½ years, all students in engineering will take the same program emphasizing the interrelationship of all engineering subjects to form the broad background required of all modern engineers.

The program of 136 semester units presumes that the entering student brings a high school preparation which includes geometry, trigonometry, two years of algebra, either physics or chemistry, and mechanical drawing. Students deficient in any of these areas will be expected to make them up during the summer before first registration. Placement examinations are required in mathematics and chemistry. The major options in undergraduate engineering are:

- Electrical engineering
- Mechanical and aerospace engineering
- Civil engineering
- Engineering science

MINIMUM REQUIREMENTS FOR THE UNDERGRADUATE DEGREE

Lower Division, Nonengineering (all required for B.S.):

Units

PE (any activities).....	2
Hist 170A or 170B U.S. History.....	3
Speech 101 Fundamentals of Speech.....	3
Eng 101 Composition and Literature.....	3
Eng 102 Literature and Composition.....	3
Pol Sci 101 Introduction to Politics and Government.....	3
Psych 101 Introduction to Psychology.....	3
Humanities approved elective	3
Math 150A * Analytic Geometry and Calculus.....	4
Math 150B * Analytic Geometry and Calculus.....	4

* Students receiving advanced placement in mathematics will be expected to replace validated courses with additional courses in mathematics.

Engineering

Units

Math 250A	Intermediate Calculus	3
Math 250B	Intermediate Calculus	3
Chem 101A	General Chemistry	5
Chem 105	Chemistry (for engineers)	3
Phys 221A	Fundamental Physics	5
Phys 221B	Fundamental Physics	5

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Lower Division, Engineering (all required for B.S.):

Engr 101	Introduction to Engineering and Computers	1
Engr 102	Graphical Analysis	2
Engr 201	Mechanics	3
Engr 202	Properties of Engineering Materials	3
Engr 203	Electric Circuits	3
Engr 203L	Electric Circuits Laboratory	1
Engr 205	Digital Computation	2

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Upper Division, Nonengineering (all required for B.S.):

Soc Sci	Approved upper division elective	3
Econ 301	Fundamentals of Economics	3
Mgmt 341	Principles of Management	3
Bio Sci	Bio-Engineering	2

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Upper Division, Engineering (all required for B.S.):

Engr 302	Dynamics	3
Engr 303	Electronics	3
Engr 303	Electronics Lab	1
Engr 304	Thermodynamics	3
Engr 305	Transport Processes	3
Engr 306A	Unified Laboratory	1
Engr 306B	Unified Laboratory	1
Engr 308	Engineering Analysis	3
Engr 312	Linear Systems Analysis	3
Engr 417	Engineering Economy	2

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Upper Division Courses for Option (32 units required for B.S.):

Four options are offered within the bachelor of science in engineering program: electrical engineering, mechanical engineering, civil engineering, and engineering science. For each option, 32 units are required for the B.S. The following list may not be all-inclusive or restrictive.

Electrical Engineering Option (32 units required for B.S.):

Engr 313	Networks and Transmission Lines	4
Engr 314	Applied Electronics	4
Engr 315	Electronics and Circuits Laboratory	1
Engr 360	Electrical Engineering Design Projects Lab	2
Engr 370	Seminar in Electrical Engineering	1
Engr 375A,B	Electrical Engineering Lab	2, 2
Engr 402	Elements of Digital Computers	3

Engr 402 L	Digital Techniques Laboratory	1
Engr 403	Computer Methods in Numerical Analysis	3
Engr 404	Analog Computation Laboratory	1
Engr 404 L	Analog Computation Laboratory	1
Engr 416	Feedback Control Systems	3
Engr 419	Electromagnetic Field Theory	3
Engr 423	Engineering Probability and Statistics	3
Engr 434	Direct Energy Conversion	3
Engr 443	Electronic Communication Systems	3
Engr 443L	Electronic Communication Systems Lab	3
Engr 445	Pulse and Digital Circuits	3
Mechanical and Aerospace Engineering Option (32 units required for B.S.):		
Engr 301	Strength of Materials	3
Engr 315	Electronics and Circuits Lab	3
Engr 316	Applied Thermodynamics	2
Engr 317	Refrigeration and Air Conditioning	4
Engr 320	Physical Metallurgy	3
Engr 335	Mechanical Analysis	3
Engr 361	Mechanical Engineering Design Projects Lab	2
Engr 371	Seminar in Mechanical Engineering	1
Engr 376A,B	Mechanical Engineering Lab	2, 2
Engr 403	Computer Methods in Numerical Analysis	3
Engr 406	Dynamic Response	3
Engr 406L	Dynamic Response Laboratory	1
Engr 407	Transfer and Rate Processes	3
Engr 410	Intermediate Dynamics	3
Engr 412	Theory of Elasticity	3
Engr 415	Gas Dynamics	3
Engr 416	Feedback Control Systems	3
Engr 421	Mechanical Design	3
Engr 423	Engineering Probability and Statistics	3
Engr 425	Turbomachinery	3
Engr 432	Aerospace Vehicle Structures	3
Engr 433	Aerodynamics	3
Engr 434	Direct Energy Conversion	3
Engr 437	Propulsion	3
Engr 441	Stability and Control of Flight Vehicles	3
Civil Engineering Option (32 units required for B.S.):		
Engr 322	Measurements	2
Engr 323	Indeterminate Structures	3
Engr 324	Soil Mechanics	4
Engr 326	Structural Design	3
Engr 327	Foundation Design	2
Engr 328	Transport Systems	2
Engr 329	Highway Engineering	3
Engr 330	Water and Waste Water Engineering	4
Engr 403	Computer Methods in Numerical Analysis	3
Engr 409	Advanced Structural Design	3
Engr 410	Intermediate Dynamics	3
Engr 411	Dynamics of Structure	3
Engr 412	Theory of Elasticity	3
Engr 413	Theory of Plates and Shells	3
Engr 414	Digital Computers in Structural Design	3

Engineering

Engineering Science Option (32 units required for B.S.):

The program in engineering science is to be selected by the student and his adviser and submitted for approval to a committee of the School of Engineering (supplemented, if appropriate, by members of the science and mathematics faculty). The courses are to be selected from upper division electives in engineering, physics, chemistry, mathematics, and biology (additional prerequisites for science courses may be required), to meet a special and specific engineering science objective of the student, such as engineering physics.

DETAIL OUTLINE OF TYPICAL EIGHT-SEMESTER PROGRAM FOR B.S. IN ENGINEERING (136 Units)

Semester 1 Freshman	Units
PE (any activity)	½
Hist 170A or B U.S. History	3
Math 150A Calculus	4
Chem 101A General Chemistry	5
Engr 101 Introduction to Engineering and Computers	1
Engr 102 Graphical Analysis	2
	<hr/> 15½
Semester 2 Freshman	
PE (any activity)	½
Math 150B Calculus	4
Physics 221A Fundamentals of Physics	5
Chem 105 Chemistry (for engineers)	3
Engr 205 Digital Computation	2
Eng 101 Composition and Literature	3
	<hr/> 17½
Semester 3 Sophomore	
PE (any activity)	½
Eng 102 World Literature and Composition	3
Pol Sci 101 Introduction to Politics and Government	3
Math 250A Calculus	3
Physics 221B Fundamental Physics	5
Engr 201 Mechanics	3
	<hr/> 17½
Semester 4 Sophomore	
PE (any activity)	½
Speech 101 Fundamentals of Speech	3
Math 250B Calculus	3
Engr 202 Properties of Engineering Materials	3
Psych 101 Introduction to Psychology	3
Engr 203 Electric Circuits	3
Engr 203L Electric Circuits Lab	1
	<hr/> 16½

Semester 5 Junior		<i>Units</i>
Engr 303	Electronics	3
Engr 303L	Electronics Lab	1
Engr 304	Thermodynamics	3
Engr 305	Transport Processes	3
Engr 306A	Unified Laboratory	1
Engr 302	Dynamics	3
Engr 308	Engineering Analysis	3
		<hr/> 17
Semester 6 Junior		
BSC	Bio-engineering	2
Econ 301	Fundamentals of Economics	3
Engr 312	Linear Systems Analysis	3
Engr 306B	Unified Laboratory	1
Engineering	Option Courses	9
		<hr/> 18
Semester 7 Senior		
Soc Sci	Elective	3
Engr 417	Engineering Economy	2
Engineering	Option Courses	12
		<hr/> 17
Semester 8 Senior		
Humanities	Elective	3
Mgmt 341	Principles of Management	3
Engineering	Option Courses	11
		<hr/> 17
		<hr/> 17
		<hr/> 136

MASTER OF SCIENCE IN ENGINEERING

Applicants, as well as continuing students, should read carefully the college requirements for master's degree programs, page 70.

The procedural steps for admission to and the completion of the degree "master of science in engineering" are as follows:

Admission Procedure

1. Apply for admission to the college in unclassified graduate status and declare the objective to be a master of science in engineering. Proof of a degree from an accredited college or university must be supplied. This must be taken care of at the Office of Admissions before the dates established in the college calendar.

2. Apply for advisement at the School of Engineering Office. This must be taken care of after admission to the college but before registration.

Prerequisites

Admission to the engineering program requires a 2.5 undergraduate grade point average; however, students may be admitted with grade deficiencies. Such deficiencies must be made up by completing 6 to 12 units of adviser-approved courses in addition to those required for the degree, with at least a 3.0 average. A committee of the engineering faculty will evaluate each student's record for

Engineering

specific course deficiencies in the engineering field. Making suitable allowance for actual engineering experience, the committee will require each student, before admission to the program, to make up such deficiencies as the committee determines.

Advancement to Classified Graduate Status (admission to the program)

Achievement of this status requires the following:

1. Meeting the prerequisites of the previous paragraph.
2. Completing the Graduate Aptitude Test and the Advanced Graduate Record Examination in Engineering. (There is no arbitrary level above which scores on tests are satisfactory. The total record of the student is used for this evaluation.)
3. Submission of one complete set of official transcripts from all colleges where previously registered (sent directly from these institutions to the Office of Admissions and Records). This is in addition to the transcript from the institution conferring the baccalaureate degree, required for admission to the college.
4. Filing an application card for classified status in the Graduate Office and making an appointment with the adviser at the Office of the School of Engineering.
5. Preparing an approved graduate study plan in consultation with his adviser.

Advancement to Candidacy

Achievement of this status requires the following:

1. Having been granted classified status in the master of science in engineering program.
2. Having completed 12 units of coursework on his master's degree study plan, including six units of 500-level courses with a GPA of not less than 3.0.
3. Filing an advancement to candidacy card in the Graduate Office and making an appointment with his adviser.

Graduation

Final achievement of the master of science in engineering requires:

1. Having been admitted to candidacy status.
2. Having completed 30 units of approved work with an overall GPA of not less than 3.0.
3. Receiving approval of the faculty of the School of Engineering, the college officer of graduate studies, and the Faculty Council.

The Program for the Master of Science in Engineering

Qualifications for the master of science in engineering requires the following:

1. Completion of a minimum of 30 units of approved upper division or graduate-level work including:
 - (a) a minimum of 6 units of approved upper division or graduate mathematics (certain engineering courses may fulfill this requirement).
 - (b) a minimum of 15 units of approved 500 level courses.
2. An overall GPA of 3.0.

A candidate for the master of science in engineering may pursue one of five options currently offered by the School of Engineering:

Civil engineering
Electrical engineering
Mechanical and aerospace engineering
Systems engineering
Engineering science

Engineering

A student is normally required to select a minimum of 15 units within these options. These 15 units may be 400-level and 500-level courses. The 400-level courses are listed in the undergraduate program (preceding) and the 500-level courses are listed below:

Electrical Engineering		<i>Units</i>
Engr 501	Microwave Techniques	3
Engr 502	State Space Theory of Control and Systems	3
Engr 503	Information Theory and Coding	3
Engr 504	Linear Network Synthesis	3
Engr 506	Digital Computer Systems	3
Engr 507	Statistical Communication Theory	3
Engr 555	Applied Electromagnetic Theory	3
Engr 557	Sampled-Data Systems	3
Engr 559	Active Network Synthesis	3

Mechanical and Aerospace Engineering		
Engr 508	Intermediate Fluid Mechanics	3
Engr 511	Advanced Dynamics	3
Engr 512	Gyrodynamics	3
Engr 518	Advanced Fluid Mechanics	3
Engr 524	Advanced Thermodynamics	3
Engr 530	Advanced Strength of Materials	3
Engr 569	Orbital Mechanics	3
Engr 573	Aerospace Guidance Systems	3
Engr 575	Kinetic Theory and Statistical Thermodynamics	3

Civil Engineering		
Engr 510	Advanced Theory of Elasticity	3
Engr 517	Theory of Plasticity	3
Engr 519	Design of Thin Shell Structures	3
Engr 545	Advanced Structural Design	3
Engr 547	Dynamics of Structures	3
Engr 549	Digital Computers in Structural Design	3
Engr 577	Stress Analysis	3

Systems Engineering		
Engr 535	Numerical Methods	3
Engr 581	Systems Engineering Methodology I	3
Engr 582	Systems Engineering Methodology II	3
Engr 585	Systems Engineering Mathematical Tools	3
Engr 587	Operational Analysis Techniques in Systems Engineering	3
Engr 591	Analytical Methods in Engineering	1-6

(Up to 9 units in systems engineering may be selected from approved subjects offered in the School of Business Administration and Economics.)

Engineering Science

The program in engineering science is to be selected by the student and his adviser and submitted for approval to a committee of the School of Engineering (supplemented, if appropriate, by members of the science and mathematics faculty). The courses selected are to meet a special and specific engineering science objective of the student, such as engineering physics.

Engineering

In addition to those courses offered in the specific options, the following two courses apply to any option, though they are not necessarily required.

Engr 598 Thesis 1-6

Engs 597 Project 1-6

See also "Steps in the Master's Degree Program," p. 70.

ANNOUNCEMENT
OF COURSES
AND
FACULTY DIRECTORY
FOR 1966-67

GENERAL COURSE NUMBERING CODE

- 100-299 Lower division courses of freshman and sophomore level, but open also to upper division students.
- 300-399 Upper division courses of junior and senior level, which do *not* give graduate credit unless included on an approved graduate study plan (such as a credential or graduate degree program) for a specific graduate student.
- 400-499 Upper division courses of junior and senior level which give graduate credit when taken by a graduate student. (Note limitations in specific graduate programs.)
- 500-599 Graduate courses organized primarily for graduate students.*
- 700-799 Graduate professional courses in the postgraduate program, not applicable to graduate degrees.

PREREQUISITES

Students are expected to meet stated prerequisites for all courses. However, in exceptional cases, and at the discretion of the division in which the course is taught, students may be allowed to meet prerequisites by examination.

INDEPENDENT STUDY

Under the independent study program, the upper division student can pursue topics or problems of special interest beyond the scope of a regular course under the supervision of a faculty adviser. The work is of a research or creative nature, and normally culminates in a paper, project, comprehensive examination, or performance. Before registering, the student must get his topic approved by the professor who will be supervising independent study. The catalog number for independent study in all departments is 499. Independent study courses may be repeated, but 3 units is the maximum credit that may be earned in one semester.

Independent study is not limited to honors students, but all those in the honors program are especially urged to undertake some of this work in the major field. The student who can be expected to profit from independent study has exceptional initiative and persistence, and a desire to delve into some special project on his own.

* Note exceptions on p. 63.

SCHOOL OF LETTERS, ARTS AND SCIENCE

ANTHROPOLOGY

201 Introduction to Physical Anthropology (3) F, S

Man in biological and evolutionary perspective. Methods, findings, concepts, and issues in the study of primates, fossil men, and races.

202 Introduction to Cultural Anthropology (3) F, S

Variations, integrations, and change in human cultures, and particularly pre-literate ones. Cultural analyses of such institutional forms as the family, economy, government, religion and art. A consideration of central problems of cultural comparison and interpretation.

203 Introduction To Archaeology (3) F, S

Relationship of archaeology, prehistory, and culture history; field methods and analysis of archaeological data. A survey of world culture history, from Pleistocene beginnings to the threshold of civilization; and introduction to the world's early centers of civilization.

301 World Ethnography (3) F, S

Prerequisite: Anthropology 202 or consent of instructor. A general survey of the peoples of the world and a study of representative cultures with special reference to their situation in the history and geography of the world.

321 The American Indians (3) F

Prerequisite: Anthropology 202 or consent of instructor. Physical and cultural characteristics of the native peoples of the New World. Prehistory and the impact of contacts with the Europeans. Major tribes of all the Americas are included in an overview, but emphasis is placed on Indians of North America.

325 Peoples of South America (3) S

Prerequisite: Anthropology 202 or consent of instructor. A cultural survey of Central and South America. Description of selected cultures representative of different cultural areas before and after contacts with Western countries.

328 Peoples of Africa (3) F

Prerequisite: Anthropology 202 or consent of instructor. A cultural survey of Africa. Description of selected cultures representative of different cultural areas before and after contacts with Western and Asian countries.

340 Peoples of Asia (3) S

Prerequisite: Anthropology 202 or consent of instructor. Survey of culture-areas and societal types of central, southern, and east Asia, with special emphasis on India and China. Analysis of Asian civilizations and nonliterate societies, emphasizing sociopolitical organization, economic systems, and religious systems.

347 Peoples of the Pacific (3) F

Prerequisite: Anthropology 202 or consent of instructor. A survey of the native peoples and cultures of the Pacific Islands, including Australia; the social and cultural patterns of representative cultures of various areas; special ethnological and theoretical problems.

Anthropology

350 Peoples of Europe (3) F

Prerequisite: Anthropology 202 or consent of instructor. Representative groups considered in modern and historical perspective, stressing especially rural-urban relationships and the dynamics of change.

360 Contemporary American Culture (3) F, S

Prerequisite: Anthropology 202 or consent of instructor. Application of anthropological methods, categories of analysis, and types of interpretation to American culture. Survey and critique of selected community studies and other kinds of relevant research.

401 Anthropological Research Methods (3) F

Prerequisites: Anthropology 202 and 6 additional units of anthropology or consent of instructor. The philosophy and methodology of science and history as they are expressed in anthropological research. Research planning, organizing, data collection and recording, categorization and interpretation of results, and reporting. Recent methodological developments.

406 Descriptive Linguistics (3) F

(Same as Linguistics 406.)

410 Language and Culture (3) F, S

Prerequisite: Anthropology 202 or consent of instructor. The study of language as a factor in culture. Introduction to anthropological linguistics. Trends in the study of language and culture.

411 Folklore (3) S

Prerequisite: Anthropology 202 or consent of instructor. An introduction to the study of folktales, myths, legends, proverbs, riddles and other forms of the verbal traditions of peoples. Major concepts and theories and research methods in the study of folklore.

413 Ethnological Music (3) F, S

Music, musicking, and musicians in various nonliterate societies.

415 Culture and Personality (3) F

Prerequisites: Anthropology 202 and Psychology 331 or 351 or Sociology 341 or consent of instructor. Comparative study of the relationship between the individual and his culture. Child training in nonwestern cultures. Survey of important concepts, studies, and research techniques. Changing viewpoints and new directions in culture-personality studies.

421 Primitive Religion (3) S

Prerequisite: Anthropology 202 or consent of instructor. Beliefs and practices in preliterate religious systems; the forms, symbolism, and social and cultural roles of these systems. Includes such topics as magic, animism, art and religion, shamans and priests, and cults.

423 Comparative Aesthetics and Symbolism (3) F, S

An analysis of the metaphysical and mystical systems underlying the "grammars" of the art, poetry, languages, myths, music, and rituals of various nonliterate and literate peoples and their development into creative experiences.

425 Primitive Law and Government (3) F

Prerequisite: Anthropology 202 or consent of instructor. Sources of law-government in primitive societies; the cultural background of law; the functions and development of law and government in primitive polities; transitions to and comparisons with classical and modern legal and political systems.

428 Primitive Social Organization (3) S

Prerequisite: Anthropology 202 or consent of instructor. A study of the social organization of societies of varying degrees of complexity; kinship systems, marriage patterns, and corporate groups; religious, political, and economic organization; social stratification, nativism, and the effects of cultural change.

430 Economic Anthropology (3) F

Prerequisite: Anthropology 202 or consent of instructor. Analysis of anthropological concepts of economy, ecology, and technology; relationship between habitat, economy, and culture. A survey of the different types of economic systems found throughout the world; outline of the economic development of mankind.

450 Culture and Education (3) F

Prerequisite: Anthropology 202 or Education 301 or consent of instructor. The transmission of values, implicit cultural assumptions, and the patterning of education in cross-cultural perspective, with special attention to American culture and development problems.

460 Culture Change (3) F

Prerequisite: Anthropology 202 and 301 or consent of instructor. Interrelations between cultural, social and psychological processes in the dynamics of culture growth and change. Impact of western technology on tribal and peasant societies. Anthropological contributions to the planning of directed sociocultural change in selected areas.

480 History of Anthropology (3) S

Prerequisite: At least 12 units of anthropology or consent of instructor. Historical antecedents of modern anthropology. A systematic survey of the development of anthropology as a scientific field; an examination of the principal contributions of leading anthropologists, past and present. Reinterpretations and emerging trends.

499 Independent Study (1-3) F, S

Prerequisite: At least 15 units of anthropology and consent of the adviser. Student selection of an individual research project involving either library or fieldwork. There are conferences with the adviser as necessary, and the work results in one or more papers. May be repeated for credit.

504 Seminar: Selected Topics in Cultural Anthropology (3) F, S

Prerequisites: Completion of undergraduate major in anthropology and/or graduate standing or consent of instructor. The topic chosen and a general outline of the seminar will be announced by the Department of Anthropology to graduate students in Anthropology and circulated to other potentially interested departments. May be repeated.

599 Independent Graduate Research (1-3) F, S

Prerequisite: Consent of department. Individual research on either a field or a library study, with conferences with a project adviser as necessary, and resulting in one or more papers. May be repeated for credit.

ART

100 Exploratory Course in Art (3) F, S

Exploration and creative use of a variety of art materials, processes, and concepts. Field trips required. Not open to art majors for credit except by permission of the Art Department. (6 hours activity)

101 Introduction to Art (3) F

A course for the general student designed to develop an understanding of historical and contemporary art forms. Illustrated with examples of painting, sculpture, architecture, and design. Field trips required. Not open to art majors for credit except by permission of the Art Department.

103 Two-dimensional Design (3) F, S

The inventive use of materials, tools, and elements of plastic organization as related to a two-dimensional surface. (6 hours activity)

104 Three-dimensional Design (3) F, S

The inventive use of materials, tools, and elements of plastic organization as related to three-dimensional surfaces and forms. (6 hours activity)

106A,B Beginning Ceramics (3,3) F, S

A basic course in the study of form as related to ceramic materials, tools, processes, and concepts. (6 hours activity)

107A,B Beginning Drawing and Painting (3,3) F, S

Beginning work in the creative use of the materials of drawing and painting with emphasis on visual concepts and use of medium, individual exploration, growth, planning and craftsmanship. (9 hours laboratory)

111 Fundamentals of Art (3) F, S

A comparative study of the elements of plastic organization in relation to personal and cultural aesthetic expression and concepts. Fundamental art ideas, problems of organization and structure, and terminology. Field trips required.

117A,B,C,D Life Drawing (1,1,1,1) F, S

Drawing from the live model. 117B will include working from the model with three-dimensional materials. (3 hours laboratory for each unit)

201A,B Art and Civilization (3,3) F, S

A comparative survey of the basic ideas, forms, and styles of the visual arts as they developed in various cultures from prehistoric time to the present day.

205A,B Beginning Crafts (3,3) F, S

Prerequisite: Art 103 or Art 100. A study of form as related to the concepts, materials, and processes involved in the making of both two- and three-dimensional art forms from wood, metal, plastics, and paper. (6 hours activity)

207A,B Drawing and Painting (3,3) F, S

Prerequisite: Art 117A,B, Art 107A,B, Art 103, or the equivalents. An intensive study of devices and means for representing volume, structure, and character of objects. Emphasis in 207A on the use of drawing materials in relation to manmade and nature objects and in 207B on the use of painting materials in relation to the head and figure. (9 hours laboratory)

216A,B Beginning Sculpture (3,3) F, S

Prerequisite: Art 104. An introductory course in sculpture with emphasis on the creative use of wood and metal, power equipment and hand tools. (6 hours activity)

223A,B Lettering, Typography and Rendering (3,3) F, S

Prerequisites: Art 103, 107A, 117A. A study of the history, design, and use of letter forms including techniques for rough and comprehensive layouts and the use of both hand-lettered forms and handset type. (6 hours activity)

286 Design for the Theatre (3) S

(Same as Drama 286.)

301 Western Art: Ancient to Classic (3) F

A study of the developments in art from prehistoric time to the classic period in Greek art.

302 Western Art: Classic to Renaissance (3) S

Provides broad familiarity with the major styles of classic, medieval, and Russian art. Lectures, discussions and field trips.

305A,B Crafts (3,3) F, S

Prerequisites: Art 103 and 104, or 205A, or 100 and 432 or the equivalent. A study and evaluation of basic craft concepts, processes, and materials as they relate to the development of utilitarian forms. (6 hours activity)

306A,B Advanced Ceramics (3,3) F, S

Prerequisite: Art 106A or 106B. Further experiences in the study and evaluation of form as related to the creative use of ceramic concepts and materials including design, forming, glazing, and firing. (6 hours activity)

307A,B Advanced Drawing and Painting (3,3) F, S

Prerequisites: one semester of drawing and one semester of painting. The study, evaluation and creative use of the concepts and materials of drawing and painting with emphasis on individual exploration, growth, planning and craftsmanship. (9 hours laboratory)

309 Art Techniques (3) F, S

Prerequisite: Art 100 or the equivalent. Creative use of a variety of drawing and painting materials. (6 hours activity)

311 Western Art: Renaissance and Baroque (3) F

Basic problems of painting, sculpture and architecture of the Renaissance and Baroque periods. Lectures, discussion, and field trips. Also recommended for humanities and history students.

312 History of Art Since 1800 (3) S

Art of the 19th century and its development into contemporary times.

313A,B Interior Design (3,3) F, S

Prerequisites: Art 103, 104, 107A,B. Development and projection of ideas in relation to the functional, social, and aesthetic problems involved in the design and planning of living spaces for homes and small offices. (6 hours activity)

316A,B Sculpture (3,3) F, S

Prerequisites: Art 103, 104 and 117B. (6 hours activity)

317A,B Advanced Life Drawing (3,3) F, S

Prerequisite: three units lower division life drawing. Drawing and painting from the live model (9 hours laboratory)

Art

323A,B Advertising Design (3,3) F, S

Prerequisites: Art 103, 104, 107A,B. Development and projection of ideas in relation to the technical, aesthetic, and psychological aspects of advertising art. (6 hours activity)

333A,B Industrial Design (3,3) (Offered in alternate years)

Prerequisites: Art 103, 104 or 205A, 107A,B. Planning and designing of projects in relation to the technological, psychological, and social aspects of contemporary society. (6 hours activity)

338A,B Creative Photography (3,3) F, S

Prerequisites: Art 103 and Communication 218A, or its equivalent, or consent of the instructor. Photography as an art medium with emphasis on the creative use of photographic concepts, materials, processes and techniques. Field trips to be arranged. (6 hours activity)

347A,B Printmaking (3,3) F, S

Prerequisites: Art 107A,B and Art 117A,B,C. An introduction to concepts and materials involved in printmaking including lithography, etching, woodcut, aquatint, monoprint and serigraphy. (9 hours laboratory)

350A,B Painting for Non-Art Majors (3,3) F, S

Opportunities for students with little or no background in art to work creatively with various painting media both indoors and outdoors. (9 hours laboratory)

353A,B Textile Design (3,3) F, S

Prerequisite: Art 100 or Art 103. The creative exploration and design of fabrics relative to the needs of apparel, furniture, architecture, and interiors using both printed and woven processes. (6 hours activity)

380 Art and Child Development (3) F, S

Prerequisites: Art 100 and Education 311. The study and evaluation of art concepts, materials, and processes as they relate to and promote child development. (6 hours activity)

401 Contemporary Art (3) F

Fundamentals of modern painting, graphics, and photography.

402 Contemporary Art (3) S

Fundamentals of modern architecture, interior design, sculpture, and industrial design. Lectures, discussions, and field trips.

411 Oceanic Art (3) F

An introductory survey of the styles of the aboriginal people of the following regions: Australia, Melanesia, Micronesia, Polynesia and Indonesia.

412 Art of Non-European Africa (3) S

An introduction by region and tribal group to the art forms of West Coastal Africa and the Sudan, Niger River kingdoms, Yourba kingdoms, Cameroon chief-tainships. Congo tribes, Central Africa and East Coastal Africa.

413 Art of North American Indian (3) F

An introduction to the art forms and style groupings of the following American Indian groups: Eskimo, Pacific Northwest, California, Eastern Woodlands, Mound Builders, Southwestern and Northern Mexico.

414 Art of Mesoamerica (3) S

An introduction to the art and architectural forms of Mesoamerica from the early, formative stages to the Spanish Conquest.

415 Art of Central and South America (3) F

An introduction to the art styles and cultural regions of Central America and South America.

421 Oriental Art: China (3) F

A study of the historical development of the arts of China and their relation to Chinese philosophy and culture.

422 Oriental Art: Japan (3) S

A study of the historical development of the arts of Japan and their relation to Japanese philosophy and culture.

453A,B Display and Exhibition Design (2,2) F, S

A course in the appropriate and creative use of materials, processes, and design concepts as they relate to the special problems involved in the planning and preparing of displays, exhibits, bulletin boards, wall cases, and art portfolios. (More than 6 hours laboratory)

481 Special Studies in Art History and Appreciation (1-3) F, S

Prerequisite: permission of the instructor. Opportunities for intensive study and evaluation in one area of art history and appreciation.

483 Special Studies in Design (1-3)

Prerequisite: permission of the instructor. Opportunity for intensive study in the design areas listed below. Each area listed may be repeated to a maximum of 8 units, but no more than 3 units of credit may be obtained in any one area in a single semester.

483a Advertising Design F, S (2 hours activity for each unit)

483b Interior Design F, S (2 hours activity for each unit)

483c Design and Composition F, S (2 hours activity for each unit)

483d Display Design F, S (More than 3 hours laboratory for each unit)

483e Textile Design (2 hours activity for each unit)

485 Special Studies in Crafts (1-3)

Prerequisite: permission of the instructor. Opportunity for intensive study in the craft areas listed below. Each area listed may be repeated to a maximum of eight units, but no more than three units of credit may be obtained in any one area in a single semester. (2 hours activity for each unit)

485a Jewelry S

485b General Crafts F, S

485c Ceramics F, S

485d Weaving S

486 Special Studies in Sculpture (1-3) F, S

Prerequisites: Art 316A,B and permission of the instructor. Opportunity for intensive study in the following sculptural processes: modeling, carving, fabrication and casting. May be repeated to a maximum of eight units but no more than three units of credit may be obtained in a single semester. (2 hours activity for each unit)

Art

487 Special Studies in Drawing and Painting (1-3)

Prerequisite: permission of the instructor. Opportunity for intensive study in the drawing and painting areas listed below. Each area listed may be repeated to a maximum of eight units, but no more than three units of credit may be obtained in any one area in a single semester. (3 hours laboratory for each unit)

487a Painting F, S

487b Life Drawing F, S

487c Drawing F

487d Printmaking F, S

488A,B Advanced Scene Design (3,3) F, S

(Same as Drama 488 A, B.)

500 Graduate Seminar in Art (3) F

Selected advanced problems in art and art education. Each student will present research results in oral or written form.

501 Graduate Seminar in Art History and Appreciation (3) F, S

Prerequisite: Art 500. Directed research with emphasis on the relationship between historical backgrounds and developments in art and the student's area of concentration. May be repeated to a maximum of eight units.

503 Graduate Problems in Design (1-3)

Prerequisite: permission of instructor. Intensive study with emphasis on planning, development, and evaluation of individual projects in the design areas listed below. May be repeated to a maximum of eight units in each area, but no more than three units of credit may be obtained in any one area in a single semester.

503a Advertising Design F, S (2 hours activity for each unit)

503b Interior Design F, S (2 hours activity for each unit)

503c Design and Composition F, S (2 hours activity for each unit)

503d Display Design F, S (More than 3 hours laboratory for each unit)

503e Textile Design S (2 hours activity for each unit)

505 Graduate Problems in Crafts (1-3)

Prerequisite: permission of instructor. Intensive study with emphasis on planning, development, and evaluation of individual projects in the crafts areas listed below. May be repeated to a maximum of eight units but no more than three units of credit may be obtained in a single semester. (2 hours activity for each unit)

505a Jewelry S

505b General Crafts F, S

505c Ceramics F, S

506 Graduate Problems in Sculpture (1-3) F, S

Prerequisite: permission of the instructor. Intensive study with emphasis on planning, development, and evaluation of individual projects in sculpture. May be repeated to a maximum of eight units but no more than three units of credit may be obtained in a single semester. (2 hours activity for each unit)

507 Graduate Problems in Drawing and Painting (1-3)

Prerequisite: permission of instructor. Intensive study with emphasis on planning, development, and evaluation of individual projects in the drawing and painting areas listed below. May be repeated to a maximum of eight units but no more than three units of credit may be obtained in a single semester. (3 hours laboratory for each unit)

- 507a Painting F, S**
- 507b Life Drawing F, S**
- 507c Drawing S**
- 507d Printmaking F, S**

597 Project (3-6) F, S

Prerequisites: Art 500, Art 501, and recommendation of the student's graduate committee. Art 501 may be taken concurrently with Art 597 on approval of instructor. Development and presentation of a creative project in the area of concentration beyond regularly offered coursework. No more than three units may be taken in any one semester.

598 Thesis (3-6) F, S

Prerequisites: Art 500, Art 501, and recommendation of the student's graduate committee. Art 501 may be taken concurrently with Art 598 on approval of instructor. Development and presentation of a thesis in the area of concentration beyond regularly offered coursework. No more than three units may be taken in any one semester.

599 Independent Graduate Research (1-3) F, S

Open to graduate students in art with the consent of the department chairman. May be repeated for credit.

ART EDUCATION

332 Industrial Arts for Elementary Teachers (2) (Offered in alternate years)

Prerequisite: Ed 311 or consent of the instructor. Creative selection, organization and use of materials and tools in construction activities. Includes correlation experiences with the social studies, science, and other units of work. (4 hours activity)

360 Elementary School Crafts (2) (Offered in alternate years)

Studio activities and techniques of crafts appropriate to the elementary school. Strongly recommended for elementary teaching credential candidates. (4 hours activity)

370A,B Art Activity (2,2) F, S

Opportunities to observe, analyze, and evaluate child growth in and through creative art experiences. (4 hours activity)

429A,B Arts and Crafts for Teaching Exceptional Children (2,2) S

Methods of using a variety of art materials and processes with emphasis on those experiences which meet the needs of retarded or handicapped children. (4 hours activity)

442 Teaching Art in the Secondary School (2) F

Prerequisites: Education 311, Education 340, Art 380, Art Ed 360, admission to teacher education, senior standing or consent of the instructor. See pages 144-145 under Secondary Education for description of standard teaching credential program. Objectives, methods, and materials including audiovisual instruction for teaching are in secondary schools. Required, before student teaching of students presenting majors in art for the standard teaching credential. The student who has not had teaching experience must register concurrently in Educ 449.

749 Student Teaching in Art in the Secondary School and Seminar (3) S

See page 144 under Secondary Education for description and prerequisites.

Biological Science

BIOLOGICAL SCIENCE

101 Elements of Biology (5) F, S

An introduction to basic concepts in the study of living organisms and to the characteristics of the natural environment. (3 hours lecture, 6 hours laboratory)

111 Principles of Biology (4) F

Prerequisite: Chem 101A, or high school chemistry and concurrent enrollment in Chem 101A. An introduction to basic concepts which apply to all living organisms with an emphasis on the biochemical basis of structure and function. Required of all biology majors. (2 hours lecture, 6 hours laboratory)

141 Principles of Botany (4) F, S (Formerly 140)

Prerequisite: Bio Sci 101. Emphasis will be placed on the dynamic aspects of botany although the traditional areas of morphology and classification will not be neglected. Required of all biology majors. (2 hours lecture, 6 hours laboratory)

161 Principles of Zoology (4) F (Formerly 160)

Prerequisite: Bio Sci 101. An introduction to the principles of animal biology with special reference to the structure, classification, physiology, behavior and ecology of animals. Required of all biology majors. (2 hours lecture, 6 hours laboratory)

201 Field Biology (3) S

Prerequisites: one year of biological science and/or permission of instructor. A course for nonmajors designed to acquaint the interested student with the plant and animal life of this region. Several weekend field trips will be arranged to study different biotic communities. (1 hour lecture, 6 hours laboratory)

311 General Microbiology (4) F, S

Prerequisites: one semester courses in biology and chemistry. An introduction to the study of the morphology, growth and physiology of the bacteria and other microorganisms. A consideration of the role of microorganisms as agents of change in the natural processes important in health, industry and agriculture. (2 hours lecture, 6 hours laboratory)

312 Genetics Lecture (3) F

Prerequisite: one year of college biology or permission of the instructor. The general principles and modern developments in the study of heredity.

312L Genetics Laboratory (1) F

Prerequisite: Bio Sci 312. The use of a variety of organisms and methods for exploring basic principles of genetics. (3 hours laboratory)

314 Readings in Biological Sciences (1) F

Prerequisite: Bio Sci 101 or equivalent. Directed readings of classical and contemporary biological literature with periodic group discussions concerning the methods and principles studied. This course is designed for the nonmajor and is open to seniors only. (3 hours laboratory)

315 Molecular Biology (4) F

Prerequisite: a year of general chemistry and two semesters of college biology. An introduction to the physical and chemical aspects of biological science, using subcellular activities as the primary focus of the course. Topics include studies of modern data-gathering methods, subcellular structure and function, bioenergetics, biosynthesis and an introduction to heredity at the molecular level. (2 hours lecture, 6 hours laboratory)

342 Plant Anatomy (4) F

Prerequisite: Bio Sci 141 or one year of college biology or equivalent. The origin, development, and maturation of leaves, stems, roots, and flowers of vascular plants. (2 hours lecture, 6 hours laboratory)

344 Plant Morphology (4) S

Prerequisite: Bio Sci 141 or one year of college biology or equivalent. A study of the morphology and classification of the lower plant groups and a general survey of the major groups of plants exclusive of angiosperms and gymnosperms. (2 hours lecture, 6 hours laboratory)

361 Mammalian Anatomy and Physiology (4) S

Prerequisite: one year of college biology or permission of instructor. Study of the structure and function of the human organism. (2 hours lecture, 6 hours laboratory)

362 Histological Technique (3) S

Prerequisite: one year of college biology or permission of instructor. Theory and practice of the preparation of cells and tissues for microscopic study. 1 hour lecture, 6 hours laboratory)

363 Wildlife and Conservation (3) S

Prerequisites: Bio Sci 141 and 161 or equivalents or permission of instructor. A study of the relationship of land, water and wildlife with an analysis of management techniques.

401 Biogeography (3) S

Prerequisites: Bio Sci 141, 161, and 424 or 465 or permission of instructor. A study of the present day distribution of plants and animals based upon classification, fossil records, morphology and geography.

402 Biological Preparations (2) F, S

Prerequisite: three semesters of college biology, including Bio Sci 311 and 362. An introduction to the problems and practices of preparing materials for teaching and research in biology. May include preparation of whole organism specimens, histological specimens and media for characterization of microorganisms. (6 hours laboratory per week)

412 Cell Physiology (2) S

Prerequisites: one year of college biology and one semester of organic chemistry or permission of the instructor. Characteristics of life at the cellular level; processes by which the cell obtains energy and material and forms new cell substances; control of these processes by the cell; organization of structures and enzyme systems within the cell.

412L Cell Physiology Laboratory (2) S

Prerequisite: Bio Sci 412 (maybe taken concurrently). (6 hours laboratory)

413 Pathogenic Microbiology (4) S

Prerequisite: one semester of microbiology or bacteriology. Study of the biology of infectious disease: mechanisms of microbial pathogenicity; host defenses; mode of action of antibiotics and other antimicrobial agents; characteristics of specific pathogenic bacteria, fungi and viruses. (2 hours lecture, 6 hours laboratory)

414 Immunology (4) S

Prerequisite: Bio Sci 311 and 315, Chem 301A, or permission of the instructor. Study of the nature of antibodies and antigens, their role in immunity, and the specificity of their reactions. Laboratory experiments will show the kinetics of

Biological Science

antibody formation and the mechanisms of antibody-antigen reactions. Techniques in serodiagnosis will be performed. (2 hours lecture, 6 hours laboratory)

424 Evolution (3) F

Prerequisite: one year of college biology or permission of the instructor. A study of evolution, including the history of evolutionary thought; origin of universe, earth and life; geological and paleontological history of the earth; evidences for evolution derived from comparative anatomy, embryology, genetics, zoogeography; mechanisms of evolution.

424L Evolution Laboratory (1) S

Prerequisite: Biology 424 (may be taken concurrently). (3 hours laboratory)

425 Marine Biology (4) F

Prerequisites: Bio Sci 101 and Physical Science 201 or equivalent, or permission of the instructor. Physical and chemical aspects of the ocean as a background for the study of marine organisms and habitats, including a study of currents, tides, food cycles, productivity, biotic associations, succession, and communities. Habits, identification, ecology, methods of collecting, preserving and maintaining alive local marine algae, invertebrates, and fish. (3 hours lecture, 3 hours laboratory or field work)

436 Microbial Growth and Physiology (4) S

Prerequisites: one semester courses in microbiology and organic chemistry. An advanced treatment of the growth, physiology and structures of the microorganisms, with emphasis on study of the free-living bacteria, yeasts and molds. (2 hours lecture, 6 hours laboratory)

439 Microbial Ecology (4) S

Prerequisite: one semester of microbiology or bacteriology. The interaction of microbes and their environment; the influence of physical and chemical factors on the distribution and activities of microbial populations; the effects of microbes on the living and nonliving environment. Basic principles of microbial enrichment, selection and succession. On completion of the basic experiments each student will select and perform a field and laboratory study in microbial ecology. (2 hours lecture, 6 hours laboratory)

441 Plant Taxonomy (4) F

Prerequisite: Bio Sci 141 or one year of college biology or equivalent. An introduction to the study of classification of conifers and the flowering plants through field collecting and laboratory study and identification of representative kinds. (2 hours lecture, 6 hours laboratory)

443 Plant Ecology (4) S

Prerequisite: Plant Taxonomy 441. Relation of plants to their environment with emphasis on climatic and soil factors influencing their structure, behavior, and distribution. (2 hours lecture, 6 hours laboratory)

444 Plant Physiology (4) S

Prerequisite: Bio Sci 141 or equivalent and one semester of organic chemistry or permission of the instructor. A study of plant growth, nutrition, food synthesis, and metabolism. (2 hours lecture, 6 hours laboratory)

445 Mycology (4) F

Prerequisite: Bio Sci 141. A study of the comparative morphology and taxonomy of the fungi with an emphasis on morphological, physiological and reproductive

characteristics demonstrating evolutionary relationships. (2 hours lecture, 6 hours laboratory)

446 Algology (4) S

Prerequisite: Bio Sci 141 or equivalent. A study of the comparative morphology and taxonomy of the algae including a consideration of the physiological and chemical characteristics demonstrating evolutionary relationships. (2 hours lecture, 6 hours laboratory or field work)

452 Economic Botany (3) F

Prerequisites: Bio Sci 141 or permission of the instructor. An examination of man's dependence upon and economic interest in plants throughout the world.

461 Invertebrate Zoology (4) F

Prerequisite: Bio Sci 161, or a year of college biology or permission of instructor. Evolution, classification, physiological adaptations, and biology of invertebrate animals. Includes dissection, identification and observation of living animals. (2 hours lecture, 6 hours laboratory, or field work)

463 Comparative Vertebrate Anatomy (4) F

Prerequisite: a year course in general zoology or biology, or permission of the instructor. A comparative study of the chordates, with emphasis on morphology and evolution of various organ systems from fish through mammals. Includes thorough dissection of dogfish, necturus, and cat. (2 hours lecture, 6 hours laboratory)

464 Embryology (4) S

Prerequisite: a year course in general zoology or biology or permission of the instructor. Study of development from fertilization through organogenesis with laboratory work on the frog, chick, and pig. (2 hours lecture, 6 hours laboratory)

465 Animal Ecology (4) F

Prerequisite: three semesters of college biology or permission of the instructor. A survey of the physical, chemical, and biological factors of the environment as they affect the distribution and mode of life of animals. (2 hours lecture, 6 hours laboratory)

467 Entomology (4) S

Prerequisite: Bio Sci 161, or a year of college biology or permission of instructor. Anatomy, physiology, evolution, and biology of insects and other terrestrial arthropods. Laboratory includes detailed dissection, collection, identification, and observation of living arthropods. (2 hours lecture, and 6 hours laboratory or field work)

468 Comparative Animal Physiology (4) F

Prerequisites: principles of zoology, Chem 101A, 101B, and organic chemistry. A comparative survey of organ systems and physiological processes among invertebrate and vertebrate animals. (2 hours lecture, 6 hours laboratory)

469 Ichthyology (4) F

Prerequisites: a year of college biology, comparative vertebrate anatomy, and natural history of the vertebrates, or permission of the instructor. The biology, structure, physiology, ecology, evolution and economic importance of fishes. Laboratory and field work in identification, collection, and natural history of fishes. (2 hours lecture, 6 hours laboratory or field work per week; one or more weekend trips per semester required)

Biological Science

471 Natural History of the Vertebrates (4) S

Prerequisites: one year of college biology; comparative vertebrate anatomy, or permission of the instructor. Natural history, behavior, distribution, and ecology of the vertebrates. Laboratory and field emphasis on identification, behavior, maintenance of living and preserved animals. (2 hours lecture, 6 hours laboratory or fieldwork)

472 Parasitology (4) S

Prerequisite: one year of general biology or permission of instructor. A consideration of the symbiotic relationships existing at all levels of animal organization. Emphasis will be placed on the natural history, biology, physiology, ecology and laboratory recognition of symbiotic organisms. (2 hours lecture, 6 hours laboratory)

476 Herpetology (4) S

Prerequisites: a year of college biology, comparative vertebrate anatomy, and natural history of the vertebrates; or permission of the instructor. The biology, structure, physiology, ecology, distribution, evolution, and behavior of amphibians and reptiles. Laboratory and field work in identification, collection, study of amphibians and reptiles including studies on reptile and amphibian behavior and physiology. (2 hours lecture, 6 hours laboratory or field work per week; one or more weekend trips per semester required)

491 Senior Seminar (1) F, S

Prerequisites: senior standing in one of the sciences with a GPA of 2.8, or permission of the instructor. Topics in the biological sciences and related fields, selected by the faculty and students participating in the course.

499 Independent Study (1-3) F, S (Formerly 400)

Open to qualified students who wish to pursue independent study in biology under general supervision. May be repeated for credit.

502 Seminar in Biology (3) F, S

Open to graduate students only by permission of the instructor. May be repeated for credit.

510 Seminar in Physiology (3) F, S

Prerequisites: graduate standing in biological science or equivalent level of preparation. Selected topics within the area of physiology. Open to graduate students by permission of the instructor. May be repeated for credit.

511 Seminar in Microbiology (3) F, S

Open to graduate students only by permission of the instructor. May be repeated for credit.

516 Viruses and Virus Infections (4) S

Prerequisite: a course in microbiology or bacteriology. A study of viruses as molecules, as living organisms and as infectious agents. Further consideration of virus infections of man, other animals, bacteria and plants; comparison of viruses with rickettsiae and other obligate parasites. (2 hours lecture, 6 hours laboratory)

540 Seminar in Botany (3) F, S

Open to graduate students only by permission of the instructor. May be repeated for credit.

560 Seminar in Zoology (3) F, S

Open to graduate students only by permission of the instructor. May be repeated for credit.

598 Thesis (1-3) F, S

May be repeated for a maximum of 6 units of credit.

599 Independent Graduate Research (1-3) F, S (Formerly 500)

Open to graduate students only by permission of a staff member. May be repeated for credit.

CHEMISTRY

100 Introductory Chemistry (5) F, S

Prerequisite: one year of high school mathematics. Fundamental principles of chemistry with emphasis placed on the chemistry of inorganic compounds. Does not apply as credit for majors in the physical or biological sciences or for minors in the physical sciences. (4 hours lecture, 3 hours laboratory)

101A, B General Chemistry (5,5) F, S

Prerequisites: high school algebra and either high school chemistry or high school physics or Chemistry 100. High school physics and trigonometry strongly recommended. Intended for majors and minors in the physical and biological sciences. Chemistry placement test required.

101A—The fundamental principles of chemistry including stoichiometry, gas laws, solid and liquid states, changes of state, modern atom concepts, chemical bonding and chemical equilibrium with emphasis on quantitative acid-base chemistry. Laboratory: experiments applying elementary physical chemistry and volumetric quantitative analysis. (3 hours lecture discussion, 6 hours laboratory)

101B—Oxidation-reduction chemistry, introduction to chemical thermodynamics and chemical kinetics, discussions of the chemistry of representative and transition elements, and introductions to biochemistry, organic and nuclear chemistry. Laboratory: Experiments concerning gravimetric and volumetric quantitative analysis, selected topics in qualitative analysis and inorganic preparations. (3 hours lecture discussion, 6 hours laboratory)

105 General Chemistry for Engineers (3) F, S

Prerequisite: Chemistry 101A. Description the same as Chemistry 101B. Open only to engineering majors. Not open to students with credit in Chemistry 101B.

201 Modern Physical Science (4) F, S. (See course description under Physical Science)

205 Glassblowing (1) F, S

Elementary training in the manipulation of glass leading to the construction of scientific glass apparatus. Enrollment limited with preference given to junior and senior physical science majors. (4 hours laboratory)

211 Quantitative Analysis (4) F, S

Prerequisites: two semesters of college chemistry. Stoichiometry and the fundamentals of volumetric and gravimetric quantitative analysis. Students completing Chemistry 101B with a grade of C or better will not receive credit. (2 hours lecture discussion, 6 hours laboratory)

Chemistry

251 Elementary Organic Chemistry (4) F, S

Prerequisite: Chemistry 100 or equivalent. A course for nonchemistry majors designed to provide an introduction to the properties, methods of preparation, and reactions of the more important classes of organic compounds. (3 hours lecture discussion, 3 hours laboratory)

301A,B Organic Chemistry (3,3) F, S

Prerequisites: Chemistry 101B or equivalent and concurrent enrollment in either Chemistry 302A,B or Chemistry 303A,B. A comprehensive course in organic chemistry with emphasis on the modern theories of structure and reaction mechanism.

302A,B Organic Chemistry Laboratory (1,1) F, S

Prerequisite: concurrent enrollment in Chemistry 301A,B. A course designed to give training in the basic techniques of the organic chemistry laboratory, including synthesis of typical aliphatic and aromatic compounds. (3 hours laboratory)

303A,B Organic Chemistry Laboratory (2,2) F, S

Prerequisite: concurrent enrollment in Chemistry 301A,B. Experiments illustrating laboratory techniques, syntheses, and instrumental methods used in the modern organic chemistry laboratory. Recommended for chemistry majors. (6 hours laboratory)

312 Quantitative Chemistry (4) F, S (Formerly 212)

Prerequisites: Chemistry 101A,B, (grade C or better) or Chemistry 211. Physics 211A,B, or Physics 221A,B strongly recommended. Modern analytical chemistry including contemporary separation methods, nonaqueous quantitative chemistry, and introductions to instrumental methods of analysis in electrochemistry, absorption spectroscopy, and radiochemistry. (2 hours lecture discussion, 6 hours laboratory)

351 Introduction to Biochemistry (4) F, S

Prerequisites: Chemistry 251 or Chemistry 301B and five units of biology. A survey of the chemistry and metabolism of proteins, carbohydrates, lipids, hormones, in plants, animals, and microorganisms. (3 hours lecture discussion, 3 hours laboratory)

371A,B Physical Chemistry (3,3) F, S

Prerequisites: Mathematics 250A,B, Physics 221A,B, and Chemistry 101B. Chemistry 212 recommended. Equivalent courses may be substituted. A study of the fundamental laws and theories of chemistry. Thermodynamics, solutions, chemical and phase equilibria, electrochemistry, transport phenomena, atomic and molecular structure, and kinetics are the major topics discovered. Discussions with emphasis on the use of fundamental principles to solve problems.

401 Organic Preparations (2-3) S

Prerequisite: Chemistry 301A,B or equivalent. Laboratory exercises using advanced methods and techniques for the preparation of organic compounds. Library work required. (6 or 9 hours of laboratory)

403 Characterization of Organic Compounds (4) F

Prerequisite: Chemistry 301A,B or equivalent. The identification of organic compounds as pure substances or in mixtures. (2 hours lecture discussion, 6 hours laboratory)

411 Instrumental Analysis (4) F, S

Prerequisites: Chemistry 212, 301A,B, Chemistry 371A (concurrent enrollment acceptable), and Physics 221A,B. Advanced topics in absorption and emission spectroscopy, nuclear magnetic resonance, electron spin resonance, mass spectrometry, gas chromatography, X-ray methods, electrochemistry and radiochemistry. (2 hours lecture discussion, 6 hours laboratory)

421A,B General Biochemistry (3,3) F, S

Prerequisite: Chemistry 301B or equivalent. Survey of major areas of biochemistry, including chemistry and functions of compounds of biochemical interest.

422A,B General Biochemistry Laboratory (2,2) F, S

Prerequisites: Concurrent or prior enrollment in General Biochemistry 421A,B. Laboratory designed to illustrate the chemistry and metabolism of carbohydrates, lipids, and proteins, and to introduce the student to research methods. (6 hours of laboratory)

425 Advanced Inorganic Chemistry (3) F, S

Prerequisites: Chemistry 101A,B or equivalent and Chemistry 301A,B and Chemistry 371A,B. A comprehensive inorganic chemistry course with an introduction to modern theories of chemical bonding and structure. Theoretical treatments include molecular orbital and ligand field theory with their extensions, coordination and transition metal chemistry, various aspects of nonmetal chemistry and a discussion of hydride properties.

426 Inorganic Preparations (3) F, S

Prerequisites: Chemistry 212, 301A,B and 425 or its equivalent. Laboratory exercises in the preparation and identification of inorganic compounds. There is a minimum of five required preparations each of which is representative of a different class of compounds. Library work required. (1 hour lecture discussion, 6 hours laboratory)

431 Advanced Organic Chemistry (3) S

Prerequisites: Chemistry 301A,B, Chemistry 371A and Chemistry 371B (or concurrent enrollment). Theoretical aspects of organic chemistry with emphasis on the modern concepts of structure and chemical reactivity.

441 Physical Chemistry Laboratory (3) F, S

Prerequisite: Chemistry 371A,B. May be taken concurrently with Chemistry 371B with the permission of the instructor. Laboratory exercises illustrating the physical principles of chemistry. (1 hour lecture discussion, 6 hours laboratory)

451 Advanced Physical Chemistry (3) F

Prerequisite: Chemistry 371A,B. An introduction to the application of quantum mechanics and statistical mechanics in chemistry.

461 Chemical Thermodynamics (3) S

Prerequisite: Chemistry 371A,B or equivalent. A study of thermodynamic principles and their application to chemical processes.

472 Chemical Crystallography (3) S

Prerequisites: Chemistry 101A,B and Physics 221A,B or equivalent courses. An introduction to the fundamentals of morphological crystallography and crystal symmetry, the nature of X-rays and X-ray diffraction, the recording and interpretation of diffraction phenomena, and the analysis of crystal structures with applications in chemistry.

Communication

475 Theory of Spectroscopy (3) F

Prerequisite: Chemistry 371A,B or equivalent. An introduction to the theory of the structures of the electronic spectra of diatomic and simpler polyatomic molecules, transition rules, group theory, and UV, IR, NMR, and Raman spectra.

491 Chemical Literature (1) F, S

Prerequisite: Upper division standing. An introduction to the types and use of chemical literature.

495 Senior Research (1-3) F, S

Prerequisite: Consent of supervising instructor. Open only to students with a 3.0 grade point average in chemistry. An introduction to the methods of chemical research through a research project carried out under the supervision of one of the Chemistry Department faculty. May be repeated for credit.

499 Independent Study (1-3) F, S

Study of some special topic in chemistry, selected in consultation with the instructor and carried out under his supervision. May be repeated for credit.

500 Research in Chemistry (1-6) F, S

Prerequisites: Admission to graduate standing and prior arrangements with the instructor. Research in one of the fields of chemistry on an individual basis under the supervision of an appropriate faculty member.

511 Theory of the Chemical Bond (3) S

Prerequisite: Graduate Standing and Chemistry 371A,B and Chemistry 425 or their equivalents. An introduction to the principles of molecular formation, electronic configurations in ground states of molecules, resonance energies, electronegativity, bond energies, hybrid bonds, three center bonds, calculation of bond lengths, and ionization potentials.

COMMUNICATION

101 Reporting and Writing (3) F, S

Introduction to news reporting and writing, with emphasis on news gathering, evaluation, and the principles of clarity and conciseness. Typing ability required.

102 Reporting and Writing (3) F, S

Prerequisite: Communication 101 or permission of instructor. Concentration on writing of more advanced news stories and news features. Typing ability required.

216A Introduction to Photography (2) F, S

An introductory lecture and laboratory course in photographic theory and the application of photographic principles. (1 hour lecture, 3 hours lab)

218B Communications Photography (2) F, S

A lecture and laboratory course applying photographic principles to the requirements of mass communications. (1 hour lecture, 3 hours lab)

290 History and Aesthetics of Motion Pictures (3) F

(Same as Drama 290)

331 News Communication (3) F

An introduction to the news communication media, with experience in news writing. A writing course open to nonmajors and recommended for credential candidates. (Not open to students with credit in Communication 101-102.)

332 Copy Editing and Makeup (3) F

Prerequisite: Communication 101 and 102, or permission of instructor. Practice and theory of editing information materials for publication in newspapers and magazines. (6 hours activity)

333 Mass Communication in Modern Society (3) F, S

The basic structure and the interrelationships of newspapers, magazines, films, radio, television, in terms of their significance as social instruments and economic entities in modern society.

334 Feature Article Writing (3) F

Nonfiction writing for newspapers and magazines, including study of sources, methods, and markets. Open to nonmajors.

335 Reporting of Public Affairs (3) S

Prerequisites: Communication 101 and 102, or permission of instructor. Coverage in depth of significant events pertinent to operations of governmental units and related organizations.

338 Newspaper Production (3) F, S

Prerequisite: permission of the instructor. A lecture and activity course in which members of the class constitute the editorial staff of the college newspaper. The group meets four hours per week for critiques in news reporting, writing, editing and makeup, followed by production. With consent of instructor, the course may be repeated up to a maximum of 9 units credit. (More than 9 hours lab)

353 Advertising Copy and Layout (3) F

Writing of copy and layout of advertisements, based on study of sales appeals, attention factors, and illustrations. (6 hours activity)

354 Retail Advertising (3) F

Principles and procedures of retail advertising; utilization of mass media; supervised field assignments in the analysis of specific advertising needs.

356 Advertising Production (1) S

Preparation of advertisements for the college newspaper, magazine and yearbook. Advertising accounts assigned to each student. Weekly critique sessions. Individual consultation with instructor. (5 hours lab)

358A,B Publications Production (2,2) F, S

A workshop for students engaged in the production of the college magazine and yearbook and other types of student publications, as scheduled by appropriate college authorities. Activities will include writing, editing, photography, art work, and layout. Open to nonmajors. (More than 6 hours lab)

361 Theory and Practice of Public Relations (3) F

Examination of basic principles of public relations and their application in non-commercial as well as commercial fields, including industry, education, government and welfare.

371 Radio-television News and Public Affairs (3) S

Theory and practice of covering news events and public affairs for radio and television. Student material will be prepared for broadcast locally. (6 hours activity)

375 The Documentary Film (3) F

Purpose and development of the documentary; current trends; critical analysis; production requirements; future of the medium in business, government and education, and television. Students will analyze selected documentary films.

Communication

380 Introduction to Radio and Television (3) F, S

(Same as Drama 380)

401 Report Writing (3) F, S

Planning, organizing and writing of various kinds of reports for business, education and government. Consideration will be given to use of graphic aids and preparation of copy for reports that are to be printed. Recommended for non-majors.

403 Technical Writing (3) F

The study of uses of technical writing in industry, science and engineering, and the completion of written assignments designed to test understanding of, and provide experience with various forms.

407 Communication and the Law (3) S

Development of Anglo-American concept of freedom of speech and press; statutes and administrative regulations affecting freedom of information and of publishing, advertising and telecommunications. Problems of libel and slander, rights in news and advertising, contempt, copyright, and invasion of privacy. Open to nonmajors.

425 History and Philosophy of American Mass Communication (3) F

The development of American mass communication beginning with newspapers and periodicals and continuing through radio and television. Includes ideological, political, social and economic aspects.

426 World Communication Systems (3) S

The examination of major mass communication systems, both democratic and totalitarian, and the means by which news and propaganda are conveyed internationally.

427 Seminar on Current Issues in Mass Communication (3) S

Prerequisite: consent of instructor. Consideration of problems such as the extent to which the mass media should be regulated by the government, "objective" versus "interpretive" news reporting, and ethical and legal questions of particular cases.

439 Mass Media Internship (2) F, S

According to his vocational preference, the student serves a supervised internship with a newspaper, magazine, radio or television station, press association, advertising agency, or public relations firm.

451 National Advertising Campaigns (3) S

Advanced study of advertising campaigns; utilization of news media—television, newspapers, magazines, etc.—in national advertising programs. Design of complete campaign from idea to production.

463 Public Relations Methods (3) S

Prerequisite: Communication 361 or equivalent, or consent of the instructor. Means by which public relations concepts are carried out through the mass media.

465 International Public Relations (3) S

Application of public relations principle to the requirements of international operation in business, education, religion and philanthropy.

499 Independent Study (1-3) F, S

Prerequisite: consent of the department chairman. Individually supervised mass media projects and research on and off campus. Research and projects may involve newspapers, magazines, radio, television, and public relations agencies. May be repeated for credit.

500 Mass Communication Theory (3) S

Prerequisite: B.A. degree, background in mass communications, or consent of instructor. Theory of mass communication in terms of communicator, media, and audience. Consideration of extensive research regarding probable effects of mass communications.

501 Literature of Mass Communications (3) S

Types, sources, and uses of mass communication literature; application to individual graduate studies.

599 Independent Graduate Research (1-3) F, S

Prerequisite: consent of the department chairman. Individually supervised mass media projects or research for graduate students. May be repeated for credit.

COMPARATIVE LITERATURE

(Offered by the Department of English)

312 The Bible as Literature (3) F, S

The evolution of major ideas and attitudes in the Old and New Testaments; the influence of the Hebraic-Christian tradition in shaping the values of Western civilization.

315 Classical Mythology in World Literature (3) F

The origins, elements, forms and functions of classical mythology in works from the earliest times to the present.

324A Advanced World Literature (3) F

Selected readings in Indian, Chinese, Japanese, Middle Eastern and European literature from the beginning to 1650.

324B Advanced World Literature (3) S

Selected readings from Oriental and Western literature from 1650 to the present.

332 Medieval Literature of Western Europe (3) S

Representative works in translation, from Beowulf to Dante.

333 Literature of the Renaissance (3) F

Major phases of the Renaissance as a literary movement, from Erasmus to Montaigne and Cervantes.

373 Masters of Russian Literature (3) S

Reading, discussion, and interpretation of selected works by Pushkin, Dostoyevsky, Tolstoy, Chekhov, Pasternak, and others, and their relationship to Western literature.

375 Hispanic Literature and Culture (3) S

A survey of Hispanic contributions to world culture, with emphasis on understanding contemporary Latin American civilization.

425A Oriental Literature (3) F

A study of selected translations of Indian and Chinese literature.

Drama

425B Oriental Literature (3) S

A study of selected translations of Japanese literature.

450 The Naturalists (3) F, S

A study of naturalism in the works of Turgenev, Balzac, the brothers Goncourt, Maupassant, Zola, Huysmans, Ibsen, Verga; and also the works of Gissing, Moore, Hardy, Garland, Crane, Norris, Dreiser, London, and O'Neill.

453 The Novel in France and Germany (3) S

Reading, discussion, and interpretation of outstanding novels in translation with a view toward determining some principles of the narrative arts. Emphasis on Goethe, Stendahl, Flaubert, Mann, Kafka, Proust, and others.

454 Contemporary Movements in European Literature (3) F, S

A study of modern literary movements, including naturalism, realism, symbolism, expressionism and surrealism, with reading and discussion of selected examples.

473A,B World Drama (3,3) F, S

Reading, discussion and interpretation of great plays of the world in translation, emphasizing them as literature for performance. First semester from ancient Greece through the mid-19th century; second semester, from Ibsen to the present. (Same as Drama 473A,B.)

481 Senior Seminar: Ethical Problems in Literature (3) F

A systematic investigation of ethical assumptions displayed in representative samples of the greatest Western cultures and literary types. Involves aesthetics, ethics, philosophy, and human social behavior.

491 Senior Seminar: Greek Tragedy (3) S

Fifth century Greek tragedy through the extant works of Aeschylus and Sophocles, and ten plays of Euripides. (Same as Drama 491.)

582 Graduate Seminar: Dante (3) S

DRAMA

211 Introduction to Oral Interpretation (3) F, S

Prerequisite: Speech 101, a high school speech course, or consent of instructor. A fundamentals course devoted to theory, methods, and practice in the performance of oral communication of different types of literature. (Same as Speech 211.)

245A,B Mime and Pantomime (2,2) F, S

Theory and practice of mime and pantomime for drama, dance and education (expression and gesture). Provide historical and contemporary knowledge and techniques with emphasis on individual development of creative skill in mime and pantomime. (2 hours—lecture, 2 hours—activity)

271 Introduction to Theatre Arts (3) F, S

A study of the evolution of theatre, motion pictures, radio and television as composite arts. Emphasis is placed on the visual and production aspects as influenced by different cultures, traditions, and technologies. Field trips to certain significant productions.

272 Understanding Theatre (3) F, S

A nontechnical survey course for the general student leading to an appreciation and understanding of the theatre as a medium of communication and entertainment and as an art form. Field trips to certain significant productions.

273A,B Acting (3,3) F, S

Laboratory practice and discussions of the form and content of the art of acting: (A) action, motivation and circumstances of behavior on stage; (B) problems in characterization. (6 hours—activity)

276A,B Beginning Stagecraft (2,2) F, S

Participation in the preparation and execution of the departmental and student productions: (A) production organization; scenic forms; construction, tools and materials; properties; (B) scene painting, lighting fundamentals, sound. (More than 6 hours—production)

285A,B Theatrical Makeup (1,1) F, S

Theory and practice in makeup for stage and television. Emphasis on development of individual skill in techniques of character analysis, application in pigment, plastic, hair makeup, and selection and use of makeup equipment. (3 hours—activity)

286 Design for the Theatre (3) S

Prerequisite: Art 103, 104 or Drama 276A or 276B, or consent of instructor. Study and practice in the principles of designing for the stage. Practical work in the designing and planning of sets for drama productions. (Same as Art 286.)

290 History and Aesthetics of Motion Pictures (3) F

History and development of motion pictures as an art form combining lectures, readings, discussion, and screening of films. (Same as Comm. 290)

311 Oral Interpretation (3) F, S

Prerequisite: Drama 211 or Speech 211 or consent of instructor. The principles and practice of reading aloud from the printed page. Analysis of selections from prose and poetry are emphasized. The development of voice control and projection of idea and motion. (Same as Speech 311.)

314A,B Reading Theatre (3,3) F, S

Prerequisite: Drama 211 or Speech 211. Oral reading in which the emphasis is placed on group and individual reading of dramatic literature. The first semester will emphasize modern and contemporary dramatic literature and the second semester will include selections from the Elizabethan, Renaissance and Romantic periods.

341 Phonetics (3) F

(Same as Speech 341)

364 Seminar in Writing (3) F, S

Prerequisite: Evidence of student's previous interest in creative writing and consent of the instructor. Study of superior models, development of style, and group criticism and evaluation of each student's independent work, as it relates to play-writing. May be repeated for credit. (Same as English 364)

370A,B Fundamentals of Directing (3,3) F, S

Prerequisite: consent of instructor. The study of prerehearsal problems and procedures, of the structural analysis of plays, and of composition, picturization, pantomimic dramatization, movement, and rhythm onstage. Practice in directing scenes. (6 hours activity)

373A,B Advanced Acting (3,3) F, S

Prerequisite: Drama 273A,B. A study of historical theories and techniques of styles of acting as an art form. The first semester will include Greek through Neoclassic periods and the second semester will include the 18th century to contemporary styles. (6 hours—activity)

Drama

374A,B Dance Theatre and Production (2,2) F, S

Prerequisite: Physical Education 143 or the equivalent or consent of instructor. Theory and practice of creative and expressive movement in relation to the theatre and dance production. (More than 6 hours—production)

376A,B Advanced Stagecraft (2,2) F, S

Participation in the supervising of major areas of technical production; stage management, lighting design, production management, house management. (More than 6 hours—production)

377A,B Stage Costuming (2,2) F, S

Prerequisites: Stagecraft 376A or permission of the instructor. Principles and theory of costumes for stage and television including both historical and contemporary techniques and application. (More than 6 hours—production)

378A,B Experimental Theatre (1-3), (1-3) F, S

Prerequisites: consent of instructor. An activity course in which dramatic principles are applied through production of full length and one-act plays using various styles of acting and staging. One section includes mime and pantomime for drama, dance and education. (More than 3 hours production per unit)

380 Introduction to Radio and Television (3) F, S

The history and development of the broadcasting industry and its impact and influence on our society. A study of the basic broadcasting practices, audiences, production and programming. (Same as Communication 380)

382 Television Techniques (3) F, S

Survey of the development and current trends in television techniques, programming, and production.

383 Radio and Television Writing (3) S

Study of the principles and practices and experience in the writing of scripts and other forms of continuity for both radio and television.

402 Dramatic Activities for Children (3) F, S

Theory and practice in the use of creative dramatics, storytelling, puppetry, assembly programs, role-playing, and other aspects of dramatics as tools for the teacher, group worker, recreation major, and others who work with children.

470A,B Directing (3,3) F, S

Theory and practice in directing scenes from plays for their oral and visual values as theatre. Second semester students will each direct public performances of two one-act plays. (6 hours activity)

473A,B World Drama (3,3) F, S

(Same as Comparative Literature 473A,B)

474 Special Studies in Dance Theatre and Production (1-3) F, S

Prerequisites: Drama 374A,B or the equivalent and consent of instructor. Opportunity for intensive study in theory and practice in dance theater and production. May be repeated to a maximum of eight units but no more than three units of credit may be obtained in a single semester. (More than 3 hours production per unit)

475A,B History of the Theatre (3,3) F, S

Examinations of the evolution of all major aspects of world theatre. (A) From ancient Greece to the end of the 18th century; (B) 19th and 20th centuries.

477 Senior Seminar in Contemporary Critical Techniques (3) F

Prerequisite: Drama 473 or equivalent. Introduction to major contemporary modes of criticism and their application to selected plays and area of productions.

478A,B Rehearsal and Performance (1-3), (1-3) F, S

Acting in stage productions. Any upper division or graduate student who desires to be considered for roles in the major productions should enroll. This class cannot be taken concurrently with either 374A,B, 376A,B or 378A,B. (More than 3 hours production per unit)

488A,B Advanced Scene Design (3,3) F, S

Prerequisites: Drama 286, or equivalent beginning work in design. Lecture in scene design with emphasis on style, ornamentation and illusion leading to practical problems in designing for the stage and television. (Same as Art 488AB.)

491 Senior Seminar: Greek Tragedy (3) S

(Same as Comparative Literature 491.)

499 Independent Study (1-3) F, S

Open to advanced students in drama with the consent of the department chairman. May be repeated for credit.

500 Introduction to Graduate Study in Drama (3) F, S

Introduction to methodological problems in graduate research. Location of source materials, including library and original data; research and project design and execution; interpretation of researches.

501 Graduate Seminar: Advanced Theatre Theory and Appreciation (3) F

Directed research with emphasis on the relationship between historical backgrounds and developments in the theatre and the student's area of concentration. May be repeated to a maximum of six units.

511 Graduate Seminar in Interpretation (3) F, S

The historical and philosophical backgrounds in the development of interpretation and its relationship to contemporary theory and practice. (Same as Speech 511.)

571 Graduate Seminar: Major Writers (3) F, S

Directed research and writing, group discussion, and lectures covering Shakespeare. The student should consult his adviser and the schedule of classes for the section appropriate to his program. (Same as English 571.)

572 Production Planning in Theatre Arts (3) F

History and philosophy of production problems in theatre arts. Organization of the college theatre as it relates to the total college program. Planning of the production within the limitations of budgets and physical facilities.

573 Graduate Seminar, Literary Genres (3,3) F, S

As appropriate to the specialized research and publications of the instructor, this course will offer directed research and writing, group discussion and lectures covering such major literary types as: tragedy, comedy and historical drama. With consent of the adviser, this course may be repeated with different content for additional credit. (Same as English 572.)

597 Project (3) F, S (Formerly 591)

Development and presentation of a creative project in the area of concentration beyond regularly offered coursework.

Drama Education

598 Thesis (3) F, S (Formerly 591)

Development and presentation of a thesis or creative project in the area of concentration beyond regularly offered coursework.

599 Independent Graduate Research (1-3) F, S

Open to graduate students in drama with the consent of the department chairman. May be repeated for credit.

DRAMA EDUCATION

442 Teaching Drama in the Secondary School (2) F, S

Prerequisites: Education 340, Education 311, admission to teacher education, senior standing or consent of the instructor. The student who has not had teaching experience must register concurrently in Education 449. See page 144 under Secondary Education for description of Standard Teaching Credential program. Objectives, methods, and materials including audio-visual instruction for teaching drama in secondary schools.

484 Educational Television Production (3) F, S

Theory and practice in the activities, methods of lesson preparation, and presentation of educational television productions.

749 Student Teaching in Drama in the Secondary School and Seminar (6) F, S

See page 144 under Secondary Education for description and prerequisites.

ENGLISH

For world literature in English translation see courses under Comparative Literature. English 101 and 102 are normal prerequisites for all courses numbered 200 or above.

101 Composition and World Literature (3) F, S

Analytical and critical writing based on the study of representative works from Classical and Biblical literature to the Renaissance.

102 World Literature and Composition (3) F, S

Prerequisite: English 101 or the equivalent. The study of representative works from the Renaissance to the modern age, as a basis for continuing practice in analytical and critical writing.

201 Analysis of Literary Forms (3) F, S

The main literary forms—prose fiction, poetry, and drama—are studied and analyzed. Various critical methods are applied to representative works mainly from English and American literature. Especially recommended for prospective teachers of literature.

202 The Short Story (3) F, S

Critical analysis of selected American and European short stories, aimed at an understanding of the structure and technique of the short story.

211 Masters of British Literature (3) F

Prerequisite: sophomore standing, or consent of instructor. An introduction to major periods and movements, major authors, and major forms through 1760.

212 Masters of British Literature (3) S

Prerequisite: sophomore standing, or consent of instructor. An introduction to major periods and movements, major authors, and major forms from 1760 through modern times.

301 Advanced Composition (3) F, S

Exercises in creativity, analysis, and rhetoric as applied in expository writing. Required of English majors seeking the secondary credential.

303 The Structure of Modern English (3) F, S

Prerequisite: junior standing. The grammar of contemporary English applied to problems in writing. Modern English usage. Required of English majors seeking the secondary credential.

321 American Literature to Whitman (3) F, S

Emphasis on major writers: Hawthorne, Poe, Melville, Emerson, Thoreau, Whitman, and others.

322 American Literature from Twain to the Moderns (3) F, S

Emphasis on Twain, James, Crane, Hemingway, Faulkner, O'Neill, Frost, Eliot.

333 Chaucer (3) F, S

Emphasis on *The Canterbury Tales*, read in Middle English. Close attention to the vocabulary, structure, and pronunciation of Chaucer's language, as indispensable to literary appreciation.

334 Shakespeare (3) F, S

Intensive study of selected major plays illustrating Shakespeare's development, dramatic art, and insight into human nature.

335 Elizabethan and Jacobean Drama (3) S

Prerequisite: English 334 or consent of the instructor. Studies of representative English dramatists of the late 16th and early 17th centuries. Emphasis on the development of the dramatic tradition in the plays of Marlowe, Jonson, Webster, Beaumont and Fletcher, and others.

336 Elizabethan Poetry and Prose (3) F

The poetry of Wyatt and Surrey, Jonson, Marlowe, Sidney, Spenser, and others; and the prose of Bacon, Greene, Lodge, Lyly, Nashe, and others.

341 Milton (3) F, S

An intensive study of the poetry and prose in the light of Milton's intellectual development.

342 The Age of Reason in English Literature (3) F

Swift, Pope, Johnson, Boswell, Addison, and Steele. The Restoration, the Age of Reason, and foreshadowings of Romanticism.

343 The Romantic Movement in English Literature (3) S

Burns, Blake; Wordsworth, Coleridge; Byron, Shelley, and Keats. The reaction against rationalism, the rise of revolutionary and liberal thought, humanitarianism, and emphasis on individual creativity.

344 English Literature of the late Nineteenth Century (3) F

Roots and development of social and aesthetic problems in essayists and poets of the late and middle 19th century, including Carlyle, Ruskin, Newman, Mill, Pater, Huxley, Tennyson, Browning, Rossetti and Hopkins.

345A,B History and Development of the English Novel (3,3) F, S

A study of the English novel from the Renaissance to the moderns, with emphasis on the 18th and 19th centuries.

English

346 The Age of Dryden (3) F

Representative poets, prose writers and dramatists of the Restoration period. Emphasis on the ideas which inform the work of Dryden, Hobbes, Rochester, Etherege, Wycherley, Congreve, Temple and others.

351 Science Fiction (3) F

Prerequisite: English 101. The study of science fiction as a genre, including future-scene fiction, the utopian novel, the superman novel, and short fantasy stories.

364 Seminar in Writing (3) F, S

Prerequisite: Evidence of student's previous interest in creative writing and consent of the instructor. Study of superior models, development of style, and group criticism and evaluation of each student's independent work. Depending on the specialized writing field of the instructor, the various sections will concentrate on fiction, plays, or poetry. May be repeated for credit.

433 Children's Literature (3) F, S

A study of masterpieces of the world's literature for children. Illustrates literary qualities appealing to children and demonstrates the ways in which children's literature reflects the particular cultural differences of the various Oriental, classical and modern cultures.

435 Advanced Shakespeare (3) S

Prerequisite: English 334. Advanced study of selected plays.

451 Philosophical Backgrounds of Modern Literature (3) F, S

The connection between representative writers and such thinkers and philosophers as Freud, Spengler, Schopenhauer, Nietzsche, and Kierkegaard. (Same as Philosophy 451.)

462 Modern British and American Novels (3) F, S

Prerequisites: survey of English, American, or world literature; an upper division literature course; or consent of the instructor. The development of modern British and American novels from 1900 to 1950.

463 Contemporary British and American Novels (3) S

The novel in English since World War II.

464 Modern British and American Drama (3) F, S

Prerequisites: survey of English, American, or world literature; an upper division literature course; or consent of the instructor. The development of British and American drama from 1900 to the present.

466 Modern British and American Poetry (3) F, S

Prerequisite: survey of English, American or world literature; an upper division literature course; or consent of the instructor. The development of British and American poetry from 1900 to the present.

490 History of the English Language (3) S

Prerequisite: senior or graduate standing. The historical development of English vocabulary, phonology, morphology, and syntax from Indo-European to modern American English.

491 Senior Seminar (3) S

Prerequisite: an undergraduate course in the area to be studied, a B average or better in subsequent English courses, or consent of the instructor.

Directed research and writing, group discussion, and lectures covering selected topics from language studies, intensive studies of major writers, criticism, and literary types, periods, and ideological trends.

499 Independent Study (3) F, S

Open to advanced students in English with the consent of the department chairman. May be repeated for credit.

570 Graduate Seminar: Language Studies (3) F, S

Directed research and writing, group discussion, and lectures covering philology, historical development, and structure of English. Individual offerings under this course number may deal with only one aspect of language studies. The student should consult his advisor and the schedule of classes for the sections appropriate to his graduate program. This course number may be repeated with different content for additional credit.

571 Graduate Seminar: Major Writers (3) F, S

As appropriate to the specialized research and publication of the instructor, this course will offer directed research and writing, group discussion, and lectures covering major figures such as: Shakespeare, Milton, Chaucer, Melville, Twain, Hawthorne, Joyce, and Coleridge. The student should consult his adviser and the schedule of classes for the sections appropriate to his graduate program. This course number may be repeated with different content for additional credit.

572 Graduate Seminar: Literary Genres (3) F, S

As appropriate to the specialized research and publication of the instructor, this course will offer directed research and writing, group discussion and lectures, covering such major literary types as: the epic, the novel, the short story, lyric poetry, tragedy, comedy, and historical drama. The student should consult his adviser and the schedule of classes for sections appropriate to his graduate program. This course number may be repeated with different content for additional credit. (Same as Drama 573.)

573 Graduate Seminar: Cultural Periods (3) F, S

As appropriate to the specialized research and publication of the instructor, this course will offer directed research and writing, group discussion, and lectures covering the literature of a particular cultural period from the Anglo-Saxon to modern times. The student should consult his adviser and his schedule of classes for the sections appropriate to his graduate program. This course number may be repeated with different content for additional credit.

574 Graduate Seminar: Special Problems in Literature (3) F, S

As appropriate to the specialized research and publication of the instructor, this course will offer directed research and writing, group discussion, and lectures covering special problems such as: the detailed critical study of varying influences on literature, including philosophical, religious, scientific, geographic, and other ecological viewpoints. The student should consult his adviser and his schedule of classes for the sections appropriate to his graduate program. This course number may be repeated with different content for additional credit.

579 Graduate Seminar: Problems in Criticism (3) F, S

Directed research and writing, group discussion, and lectures covering historical development and schools of criticism. Individual offerings within this course

English Education

number may deal with only one aspect of critical problems. The student should consult his adviser and the schedule of classes for the sections appropriate to his graduate program. This course number may be repeated with different content for additional credit.

599 Independent Graduate Research (3) F, S (Formerly 580)

Research projects in areas of specialization beyond regularly offered course work. Oral and written reports. This course number may be repeated with different content for additional credit.

ENGLISH EDUCATION

432 Teaching Language Arts in the Elementary School (2) F, S

Prerequisite: Education 311, admission to teacher education. The importance of the language arts to satisfactory personal, social, and professional life. Methods to help develop in children the skills needed for listening, speaking, reading, and writing are studied and their effectiveness evaluated.

442 Teaching English in the Secondary School (2) F, S

Prerequisites: Education 311, Admission to Teacher Education. Principles, methods, and materials of teaching English in the secondary school. The student who has not had teaching experience must register concurrently in Educ 449.

749 Student Teaching in English in the Secondary School and Seminar (6) F, S

See page 144 under Secondary Education for description and prerequisites.

FOREIGN LANGUAGES EDUCATION

(Offered by the Department of Foreign Languages and Literatures)

432 Teaching Foreign Languages in the Elementary School (2) F, S

Methods of teaching FLES: foreign languages in elementary schools. Critical review of materials, audio-lingual-visual aids, and current research. Conducted in English, with practice by students in the language they plan to teach.

442 Teaching Foreign Languages in the Secondary School (2) F, S

Prerequisites: Education 340, Education 311, admission to teacher education, senior standing or consent of instructor. The student who has not had teaching experience must register concurrently in Education 449. See pages 144 under Secondary Education for description of Standard Teaching Credential program.

The theory and practice of language learning and language teaching with special emphasis on the audiolingual method in combination with electromechanical aids. Conducted in English, with practice by students in the language they plan to teach. Required, before student teaching, of students presenting majors in foreign languages for the standard teaching credential with a specialization in secondary education.

749 Student Teaching in Foreign Languages in the Secondary School and Seminar (6) F, S

See page 144 under Secondary Education for description and prerequisites.

FRENCH

(Offered by the Department of Foreign Languages and Literatures)

101 Fundamental French (5) F, S

Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structure of French. Audiolingual assignments are an integral part of the course and are to be prepared in the language laboratory.

102 Fundamental French (5) F, S

Prerequisite: French 101 (or equivalent). Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structure of French. Audiolingual assignments are an integral part of the course and are to be prepared in the language laboratory.

203 Intermediate French (3) F, S

Prerequisite: French 102 (or equivalent). Intensive practice in speaking, understanding, reading, and writing based on cultural and literary materials. Linguistic analysis from sound to sentence.

204 Intermediate French (3) F, S

Prerequisite: French 203 (or equivalent). Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence.

213 Intermediate Composition (2) F, S

Practice in written expression based on cultural and literary materials. May be taken concurrently with French 203. Required of all majors and minors at the intermediate level; optional to others.

214 Intermediate Composition (2) F, S

Practice in written expression based on cultural and literary materials. May be taken concurrently with French 204. Required of all majors and minors at the intermediate level; optional to others.

315 Introduction to French Civilization (3) F

Prerequisite: French 204 or equivalent. Reading and discussions to develop a view of the French tradition (its social, intellectual and literary evolution) while at the same time strengthening facility with the language. Open to lower division students with the consent of the instructor. Conducted in French.

317 Advanced Conversation and Composition (3) F

Prerequisite: French 204 or equivalent. Open to lower division students with the consent of the instructor. Designed to give the student special competence in the control of French as an instrument for free oral and written expression. Conducted in French.

325 Contemporary French Civilization (3) S

Prerequisite: French 204 or equivalent. Reading and discussion to develop understanding of the social and intellectual problems, trends, and contributions of present-day France, while at the same time strengthening facility with the language. Open to lower division students with the consent of the instructor. Conducted in French.

French

400 French for Advanced Students and Teachers (3) S

Prerequisite: French 317 or consent of instructor. Intensive review of spoken French, while developing the student's powers of self-expression in the spoken and written language. Modern writings in various fields, as well as developments in methodology and texts, serve as the basis for intensive practice. Conducted in French.

431 French Literature in the Middle Ages and Renaissance (3) F

Prerequisite: French 315 or consent of instructor. The development of French literature from the 12th through the 16th centuries, through analysis of representative works. Conducted in French.

441 French Literature in the Century of Revolution (3) S

Prerequisite: French 315 or consent of instructor. The principal authors and movements (romanticism, realism, naturalism, symbolism) of the 19th century. Conducted in French.

451 French: Literature in the Baroque and Classic Age (3) F

Prerequisite: French 315 or consent of instructor. The essence and evolution of 17th-century classicism, studied principally in the major authors (Corneille, Molière, Racine, La Fayette) and in the dominant genre (the theater). Conducted in French.

461 French Literature in the Age of Enlightenment (3) S

Prerequisite: French 315 or consent of instructor. Two complementary aspects of the 18th century: reason and feeling, the *philosophes* and the current of sensibility. Emphasis on major authors (Marivaux, Voltaire, Diderot, Rousseau, Laclos). Conducted in French.

466 Introduction to French Linguistics (3) F

The analytical procedures of general linguistics as applied to French, with special attention to structural contrasts between French and English. Emphasis on the application of linguistic analysis to the teaching of modern foreign languages.

471 Senior Seminar: Contemporary French Literature (3) S

Prerequisite: French 315 or consent of instructor. The major figures of the 20th century, including the generations of Proust, Apollinaire, Malraux, Sartre and Robbe-Grillet. Conducted in French.

499 Independent Study (1-3) F, S

Supervised projects in French language or literature to be taken with the consent of the instructor and department chairman. May be repeated for credit.

500 Graduate Seminar: Advanced Structure and Style (3) S

Prerequisite: Consent of instructor. Conducted in French.

510 Graduate Seminar: Phonology (3) F

Prerequisite: French 466 or consent of instructor. Conducted in French.

530 Graduate Seminar: Historical Linguistics (3) S

Prerequisite: French 466 or consent of the instructor.

557 Graduate Seminar: French Poetry (3) F

Prerequisite: Consent of instructor. Conducted in French.

571 Graduate Seminar: French Prose (3) S

Prerequisite: Consent of instructor. Conducted in French.

575 Graduate Seminar: French Drama (3) F

Prerequisite: Consent of instructor. Conducted in French.

576 Graduate Seminar: Major Writers (3) S

Prerequisite: Consent of instructor. May be repeated for credit. Conducted in French.

598 Thesis (3-6) F, S (Formerly 580)

Prerequisite: Recommendation of the student's graduate committee.

GEOGRAPHY

200 Geography of Man (3) F, S

Man's distribution and activities within the framework of world geographic regions, with emphasis on the differing uses of natural environments.

300 Physical Geography (3) F, S

Prerequisite: Geography 200 or equivalent. A study of the basic elements of the physical environment (e.g., climate, land forms, vegetation and soils) with particular emphasis on the world patterns and interrelationships.

310 Human Geography (3) F, S

Prerequisite: Geography 200 or equivalent. An examination of the concepts relating to the areal distribution and diversity of man, his settlements, his economies and his patterns of movements.

312 Geomorphology (3) F

Prerequisite: Geography 300. A study of the development of land forms and the processes which alter them, with emphasis on present landscapes in the United States and the interpretation of topographic maps.

323 Climatology (3) S

Prerequisite: Geography 300 or consent of the instructor. A study of the climatological elements and processes, climatic types and the importance of climate in the natural and cultural landscape.

333 Economic Geography (3) F, S

A study of the production and distribution of the world's agricultural, mineral and industrial commodities, and analysis of the related economic, political and physical factors.

343 Maps and Map Interpretation (3) F

Sources, evaluation, uses, and planning of various types of maps and graphic aids for teaching and research, with emphasis on the principles of effective cartographic representation.

431 Geography of California (3) F, S (Formerly 363)

Prerequisite: Geography 200 or consent of instructor. Analysis of the geographic regions of California—their environmental diversity, settlement patterns, economic development, and current problems.

432 Geography of Anglo-America (3) F, S

Prerequisite: Geography 200, or consent of instructor. A regional study of the United States and Canada emphasizing the interrelated physical and cultural features, that give geographic personality, both to the individual regions as well as the individual countries.

Geography

433 Geography of Europe (3) F, S

Prerequisite: Geography 200, or consent of instructor. Description and analysis of physical environments and human occupancy patterns in Europe west of the Soviet Union.

434 Geography of Latin America (3) F

Prerequisite: Geography 200 or consent of instructor. A systematic and regional survey of Middle and South America with particular emphasis on the interrelationships of the physical and social factors of the area.

435 Geography of Asia (3) F

Prerequisite: Geography 200 or consent of instructor. A regional study of Asiatic nations, exclusive of the Soviet Union and Southwest Asia, showing the interrelationships of physical and cultural characteristics with special emphasis on the growing significance, in economic, social, and political terms, of such countries as China, India and Japan.

436 Geography of Africa (3) S

Prerequisite: Geography 200 or equivalent. The physical and human geography of Africa as a continent, with discussions of selective Sub-Saharan regions.

438 Geography of the Soviet Union (3) S

Prerequisite: Geography 200 or consent of instructor. Character of and bases for the regional diversity of man and land in the Soviet Union.

439 Geography of the Middle East (3) F

Prerequisite: Geography 200 or consent of instructor. The physical foundations and cultural landscapes of civilization in the Middle East, with emphasis on contemporary political, socioeconomic, and cultural changes.

445 Australia and the Pacific Islands (3) S

Prerequisite: Geography 200 or consent of the instructor. The physical, cultural, and regional geography of Australia, New Zealand, Melanesia, Micronesia, and Polynesia.

450 Conservation of Natural Resources (3) F, S (Formerly 383)

Prerequisite: Geography 200 or consent of the instructor. The principles of conservation and their application as they relate to soil, water, forests, minerals, and air, especially in the United States. The principles of conservation and their application as they relate to soil, water, forests, minerals, and air, especially in the United States.

453 The Cultural Basis of Occupancy Problems (3) F

Prerequisite: Geography 310 or equivalent, or consent of the instructor. A problem-oriented study of the interaction of institutions and occupancy, emphasizing man's societal relationships to the environment (e.g., religion, land tenure), his changing associations with natural resources (e.g., nutrition, health, and population), and his modifications of the habitat (e.g., plant domestication, technology).

463 Problems of California Geography (3) S

Prerequisite: Geography 363 or consent of instructor. Special studies of specific geographic problems in such areas as land use, water, urbanization, population, transportation and air pollution. Field observation of problems.

464 Geography of Selected Regions of Latin America (3) S

Prerequisite: Geography 434 or consent of instructor. An intensive study of the physical, cultural and social factors of Mexico, Venezuela, Argentina and Brazil.

471 Urban Geography (3) F

Prerequisite: Geography 200 or consent of instructor. The city as a geographic unit; urban settlements as regional centers; city-region relationships; the structure of villages, towns and cities, and their historical development; case studies.

475 Land Use Analysis and Classification (3) S

Prerequisite: senior or graduate standing and completion of the Geography core. Consent of the instructor is required. Analysis and interpretation of urban and rural land use and settlement with specific references to geographic field problems. The course involves application of geographic techniques and tools to local field studies. (1 hour lecture, 6 hours laboratory)

478 Cartography (3) F, S (Formerly 353)

Prerequisite: Geography 343 or consent of instructor. The compilation and construction of maps, charts, and graphs as geographic tools. (1 hour lecture, 6 hours laboratory)

481 Political Geography (3) S

Prerequisite: Geography 200 or consent of the instructor. The political map of the world with special reference to the geopolitical structure of states, colonies, and other politically organized areas.

499 Independent Study (1-3) F, S

Open to advanced students. Student must have permission of instructor under whom study will be undertaken before enrolling. May be repeated once for credit.

501 Seminar in Geographic Literature and Research (3) F (Formerly 490)

Prerequisite: graduate standing and consent of the instructor. Discussion of major geographic research themes and methods, including an appraisal of pertinent scholars and relevant literature. Students prepare several papers, one of which is a research design. Normally taken in the first year of graduate study.

513 Seminar in Regional Geography (3) F

Prerequisite: Graduate standing or consent of instructor. A seminar on selected regions of the world. May be repeated once for credit.

523 Seminar in Cultural Geography (3) S

Prerequisite: Graduate standing or consent of instructor. A seminar on selected topics pertaining to the political, economic and social relationships in the geography of man. May be repeated once for credit.

599 Independent Graduate Research (1-3) F, S

Open to graduate students by permission of graduate adviser. May be repeated once for credit.

GEOLOGY

100A Physical Geology (4) F, S

The origin, composition and distribution of earth materials will be studied. Special emphasis will be given to the modification of earth materials through mechanical and chemical processes. (3 hours lecture, 3 hours laboratory)

100B Historical Geology (4) S

Prerequisite: Geology 100A. Studies of evolutionary history of the earth including the theories of the earth's origin. Paleontological evidences for earth's evolution will be examined. (3 hours lecture, 3 hours laboratory)

German

GERMAN

(Offered by the Department of Foreign Languages and Literatures)

101 Fundamental German (5) F, S

Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structures of German. Audiolingual assignments are an integral part of the course and are to be prepared in the language laboratory.

102 Fundamental German (5) F, S

Prerequisite: German 101 or equivalent. Intensive practice in listening comprehension, speaking, reading, and writing to develop control of the sounds and the basic forms and structure of German. Audiolingual assignments are an integral part of the course and are to be prepared in the language laboratory.

203 Intermediate German (3) F, S

Intensive practice in speaking, understanding, reading, and writing based on cultural and literary materials. Linguistic analysis from sound to sentence.

204 Intermediate German (3) F, S

Prerequisite: German 203 (or equivalent). Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence.

213 Intermediate Composition (2) F, S

Practice in written expression based on cultural and literary materials. May be taken concurrently with German 203. Required of all majors and minors at the intermediate level; optional to others.

214 Intermediate Composition (2) F, S

Practice in written expression based on cultural and literary materials. May be taken concurrently with German 204. Required of all majors and minors at the intermediate level; optional to others.

315 Introduction to German Civilization (3) F

Prerequisite: German 204 or equivalent. Readings and discussions in German literature, arts and institutions to develop insights into German culture, while strengthening facility with the language. Open to lower division students with the consent of the instructor. Conducted in German.

317 Advanced Conversation and Composition (3) F

Prerequisite: German 204 or equivalent. Open to lower division students with the consent of the instructor. Designed to give the student special competence in the control of German as an instrument of free oral and written expression. Conducted in German.

325 Modern German Thought in Science and Culture (3) S

Prerequisite: German 204 or equivalent. Readings and discussion of modern German thought in science, literature, philosophy and art, designed to acquaint the student with a broad range of German contributions to present-day civilization while strengthening facility with German language. Open to lower division students with consent of instructor. Conducted in German.

400 German for Advanced Students and Teachers (3) S

Prerequisite: German 317 or consent of instructor. Intensive review of spoken German, while developing the student's powers of self-expression in the spoken and written language. Modern writings in various fields, as well as developments in methodology and texts, serve as the basis for intensive practice. Conducted in German.

431 The Works of Lessing and Schiller (3) F

The major works of Lessing and Schiller illustrating their thought and art. Conducted in German.

441 The Works of Goethe (3) S

Selected works of Goethe illustrating his thought and art. Conducted in German.

451 German Literature to the Baroque (3) F

Important works from the *Hildebrandslied* to *Simplicissimus* in the setting of their intellectual and historical climate. Conducted in German.

461 German Literature Since Goethe (3) S

Important works illustrating the development from romanticism to expressionism in the setting of their intellectual and historical climate. Conducted in German.

466 Introduction to German Linguistics (3) F

The analytical procedures of general linguistics as applied to German, with special attention to structural contrasts between German and English. Emphasis on the application of linguistic analysis to the teaching of modern foreign languages.

485 Senior Seminar in German Literature (3) F, S

Prerequisite: senior standing in German and consent of instructor. Research and discussion in depth of a literary movement, a genre or an author. Subject will vary and will be announced in the class schedule. May be repeated for credit. Conducted in German.

499 Independent Study (1-3) F, S

Supervised research projects in German language or literature to be taken with the consent of the instructor and the department chairman. May be repeated for credit.

500 Graduate Seminar: Advanced Structure and Style (3) S

Prerequisite: consent of instructor. Conducted in German.

510 Graduate Seminar: Phonology (3) F

Prerequisite: German 466 or consent of instructor. Conducted in German.

530 Graduate Seminar: Historical Linguistics (3) S

Prerequisite: German 466 or consent of instructor.

557 Graduate Seminar: German Poetry (3) S

Prerequisite: consent of instructor. Conducted in German.

571 Graduate Seminar: German Prose (3) S

Prerequisite: consent of instructor. Conducted in German.

575 Graduate Seminar: German Drama (3) F

Prerequisite: consent of instructor. Conducted in German.

576 Graduate Seminar: Major Writers (3) F

Prerequisite: consent of instructor. May be repeated for credit. Conducted in German.

598 Thesis (3-6) F, S (Formerly 580)

Prerequisite: recommendation of the student's graduate committee.

History

HISTORY

110A World Civilizations to the 17th Century (3) F

The story of man from the beginning of civilizations and historical records until the middle of the 17th century.

110B World Civilizations from 1648 (3) S

The story of man from the end of the religious wars to the present. Deals with the rise of science, the Enlightenment, the Industrial Revolution, and the rise of the ideologies of the 20th century.

170A United States to 1877 (3) F

A survey of the political, social, economic, and cultural development of the United States from the discovery to 1877. Attention is given to the Old World background, the rise of the new nation, sectional problems, and the Civil War and Reconstruction.

170B United States Since 1877 (3) S

A survey of United States history from the late 19th century to the present. Attention is given to economic transformation, political reform movements, social, cultural, and intellectual changes, and the role of the United States in world wars and the Cold War.

300 Africa and the Middle East Since 1945 (3) F

A survey of the Middle East and Africa since 1945, concentrating on the development of their present civilizations, political and economic problems, and their place in world affairs.

301 Far East and Latin America Since 1945 (3) S

A survey of present governments and civilizations in the Far East and Latin America, summarizing the background of present developments and problems in these areas.

340A History of England and Great Britain (3) F

A study of the political, economic, and social history of England and her affiliated nations and territories from the earliest times to the later Stuarts. Particular stress is placed upon the growth of the parliamentary system of government and upon English overseas activities.

340B History of England and Great Britain (3) S

A study of the political, economic, and social history of Great Britain from the later Stuarts to the present. Particular stress is placed upon the modification of the parliamentary system and the growth of economic and social democracy within Britain and upon the development of responsible political systems in the dependent territories.

350A Colonial Latin America (3) F

A survey of the pre-Columbian cultures; the conquests by Spain and Portugal and the European background of these countries; the development of the socio-economic, cultural, and governmental institutions in colonial life; the background of revolutions and the wars for independence.

350B Republican Latin America (3) S

A survey of the Latin American republics from 1826 to 1945 emphasizing the struggle for responsible government, socioeconomic, and cultural changes, and the role of United States foreign policy.

381 Westward Movement in the United States (3) S

Prerequisite: History 170A-B or equivalent. A survey of the expansion of the United States population and sovereignty from the eastern seaboard to the Pacific, colonial times to 1900, and a history of regional development during the frontier period.

383 History of California (3) F

A survey of the political, economic, and social history of California from the aboriginal inhabitants to the present, tracing the development of contemporary institutions and the historical background of current issues.

399 Historiography (3) F, S

Introduction to nature and discipline of history. A study of methods of historical research and writing, of bibliography, and of major problems of historical interpretation. Required of history majors.

401 European Intellectual History from 1648 to the Present (3) F

Prerequisite: consent of instructor. The history of the competing ideas in European history from 1648 to the present which have entered into the formation of modern European institutions.

412A Ancient Near East—Mesopotamia (3) F

Prerequisite: History 110A. A study of the political, socioeconomic, religious, and literary history of Mesopotamian culture from the rise of the Sumerian city-states to Alexander the Great, a period of over three millennia. This will include discussion of the Sumerians, Assyrians, Babylonians, Hurrians, and Persians.

412B Ancient Near East—East Mediterranean (3) S

Prerequisite: History 110A. A study of ancient Egypt from early dynastic times in the third millennium B.C. to the conquest of Alexander the Great. The history of the Syro-Palestinian region will be studied in light of its migrations and international culture. A careful study of the Hebrews and their contributions to modern civilization will be included.

415A Classical Greece (3) F

Prerequisite: History 110A or consent of instructor. A study of the civilization of ancient Greece. This course traces the rise and flourishing of the classical city-states; considerable attention is devoted to the literary and philosophic contributions to our modern civilization.

415B Hellenistic Civilization (3) S

Prerequisite: History 110A or consent of instructor. A study of the Hellenistic synthesis and the new patterns in government, the arts and sciences, philosophy and literature that appeared between the Macedonian conquest and the intervention of Rome.

417A Roman Republic (3) F (Planned for 1968-69)

Prerequisite: History 110A or consent of instructor. A study of the development of Roman social and political institutions under the republic.

417B Roman Empire (3) S (Planned for 1968-69)

Prerequisite: History 110A or consent of instructor. A study of Roman imperial institutions and culture. Attention is also given to the rise of Christianity.

423A Medieval Europe, 300-1050 (3) F

Prerequisite: History 110A. The genesis of European society and culture from the decline of Rome to the mid-11th century: the medieval church, the Barbarian

History

migrations, the Byzantine and Islamic cultures and the establishment of feudalism in western Europe.

423B Medieval Europe, 1050-1400 (3) S

Prerequisite: History 110A. A continuation of History 423A. The struggle between church and state, the rise of feudal monarchies and the intellectual, scientific and artistic expressions of European civilization in the later Middle Ages.

425A The Renaissance (3) F

Prerequisite: consent of instructor. The history of Europe from 1400 to 1525 with emphasis upon the beginnings of capitalism, the beginnings of the modern state, humanism, the pre-Reformation and the church on the eve of the Reformation.

425B The Reformation (3) S

Prerequisite: consent of instructor. The history of Europe from 1525 to 1648; deals with the Protestant and Catholic Reformations; the religious wars; the price rise; royal absolutism; the rise of science.

426 Rise of Modern Europe, 1648-1763 (3) F

Prerequisite: History 110B. European diplomatic history and the balance of power from 1648 to 1763. Attention is given to the social and philosophical developments of the period.

427 Europe in the Era of the French Revolution and Napoleon (3) S

A survey of European history from 1763 to 1815. Emphasis is placed on the politics, society, and culture of the Old Regime, the influence of the Enlightenment, the impact of the French Revolution on Europe, and the establishment of French hegemony by Napoleon.

428 19th Century Europe (3) F

Europe from 1815 to 1914. An examination of the political, economic, social, and cultural trends in European history from the Congress of Vienna to the outbreak of World War I. Special attention is given to the emerging forces of nationalism, liberalism, socialism, and secularism.

429 Europe Since 1914 (3) F

Prerequisite: History 110B. Survey of events from the beginning of World War I to the present. Special emphasis given to the economic, political, social, diplomatic, and intellectual trends of 20th Century Europe.

432 Germany Since 1648 (3) S

Prerequisite: History 110A-B. The evolution of Germany from the Peace of Westphalia to the present. Emphasis is placed on political, social, economic, diplomatic and cultural trends in the 19th and 20th centuries.

434A Russia to 1890 (3) F

Prerequisite: History 110B. An analysis of the historical developments from the establishment of the Russian state at Kiev through the great reforms and reaction of the 19th century. Emphasis is placed upon the shaping of contemporary Russia.

434B The Russian Revolutions and the Soviet Regime (3) S

An evaluation of the 1905 and 1917 revolutions and the subsequent consolidation of power under the Communist regime. Chief emphasis is placed upon the continuity and change in Russian social, political, cultural institutions and foreign policy effected by the impact of Marxist-Leninist-Stalinist ideology.

439 History of Spain (3) F

Development of Hispanic civilization from the earliest times to the present.

453 History of Mexico (3) S (Planned for 1968-69)

Mexico's political, social, economic, and intellectual development with emphasis upon the changes in the 20th century.

454 Argentina, Brazil, Chile (3) S

A history of Argentina, Brazil, and Chile; special attention to their role in western hemispheric and international affairs.

456A Sub-Saharan Africa to 1900 (3) F

The history of Africa from earliest times to partition by the European colonial powers.

456B Sub-Saharan Africa Since 1900 (3) S

A comparative analysis of colonial policy and the problems of political, economic and social change.

461A The Far East (3) F

A study of the western impact upon China, Japan, India, and Southeast Asia prior to World War I.

461B The Far East (3) S

A study of the developments in China and Japan that led to the Sino-Japanese conflict, Japan's decision to fight the United States, and the establishment of the independent states of South and Southeast Asia.

464 Southeast Asia in the Modern World (3) S

A study of the social, political and economic developments in Southeast Asia since 1800.

466A Middle East to the Crusades (3) F

Prerequisite: History 110A. The study of the events transpiring in the Middle East from the Roman world to the period of the Crusades. This will include the impact of the Islamic civilization upon the Middle East society.

466B Middle East Since the Crusades (3) S

Prerequisite: History 110B. The development of the countries of the Middle East following the Crusades to the present. This will include the Ottoman Empire, European colonialism in the Middle East, and the modern Middle East.

471 American Colonial Civilization (3) F

Prerequisite: History 170A or consent of instructor. This course studies the settlement of North America and the growth of Anglo-American civilization to the mid-eighteenth century stressing the creation of political, economic, and social institutions and a distinctive American culture.

472 United States from Colony to Nation (3) S

Prerequisite: History 170A or consent of instructor. This course studies the political, economic, and intellectual developments of eighteenth-century America with special emphasis upon Anglo-American imperial problems leading to the Revolution, the origins of American nationalism, the creation of a constitutional republic, and the rise of a party system.

473 Sectionalism and Civil War (3) F

Slavery, sectionalism, and Civil War, and the impact of these forces upon national life and thought from 1815 to 1865.

History

474 The Growth of Modern United States (3) S

Prerequisite: History 170B or consent of instructor. A study of the "great transformation" in the United States with particular focus upon the problems of an emerging modern urban society and reactions to the process. Special attention is given to the origins of progressivism.

475 United States from 1900 to 1932 (3) F

Prerequisite: History 170B or equivalent. A study of the political, economic, social, diplomatic, and intellectual trends and problems from 1900 to the election of 1932. Course will stress the reconsideration of traditional national policies toward the government, economy, and role of the United States in world affairs.

476 United States Since 1933 (3) S

A study of select aspects of United States history from 1930's to the present. Offered in two sections, one emphasizing political, economic, and diplomatic developments, the other stressing cultural, constitutional, and educational trends.

482A Socioeconomic History of the United States (3) F

Prerequisite: History 170A or consent of the instructor. The course explores the interaction of social and economic factors upon each other in the development of American society. Special attention is given to the role of business and labor in economic change. The first semester covers the development of a colonial economy and the early national economy.

482B Socioeconomic History of the United States (3) S

Prerequisite: History 170B or consent of the instructor. The course continues to explore the interaction of social and economic factors upon each other in the development of American society. Special attention is given to the role of business and labor in economic change. The second semester begins with the "takeoff stage of economic development" and ends with contemporary America.

484A American Constitutional History to 1865 (3) F

Prerequisite: History 170A. English and colonial origins, the growth of democracy, the slavery controversy, and the sectional war as they reflect constitutional development.

484B American Constitutional History from 1865 (3) S

Prerequisite: History 170B. Constitutional problems involved in the post-Civil War era, the expansion of business, World War I, the New Deal, World War II, and civil rights in the postwar era.

485A United States Foreign Relations to 1900 (3) F

A comprehensive survey of the foreign relations of the United States from the beginning of the nation until 1900. Particular attention is given to bases of policy, critical evaluation of major policies and relationships between domestic affairs and foreign policy.

485B United States Foreign Relations from 1900 (3) S

Relations from 1900 to the present. An analysis of the rise of the United States as a world power in the 20th century with special emphasis on the search for world order and the diplomacy of the atomic age.

486A Social and Intellectual History of the United States (3) F

A study of the social and intellectual development of the United States from the Puritans to the Civil War.

486B Social and Intellectual History of the United States (3) S

A study of the social and intellectual development of the United States from the Civil War to the present.

487A History of Politics in American Society (3) F

Prerequisite: History 170A-B or consent of instructor. The first semester of this course traces political developments from the Colonial Period to the end of the Civil War. Its primary focus is upon political patterns of behavior, institutional development and the response of the American political system to changing societal demands and needs.

487B History of Politics in American Society (3) S

Prerequisite: History 170A-B or consent of instructor. The second semester of the course traces political developments from Reconstruction to Lyndon Baines Johnson. Its primary focus is upon political patterns of behavior, institutional development and the response of the political system to changing societal demands and needs.

491 Proseminar in Special Historical Topics (3) (offered in alternate years)

Intensive study of phases or periods of history involving occasional lecture, discussions, directed reading, and written reports.

499 Independent Study (3) F, S

Open to advanced students in history with the consent of the department chairman. May be repeated for credit.

501 Seminar in the Content and Method of History (3) F

Prerequisite: consent of the instructor.

505 Seminar in Analysis of Recent Interpretations in History (3) S

Prerequisite: consent of the instructor.

520 Seminar in European History (3) S

Prerequisite: consent of the instructor.

570 Seminar in American History (3) F

Prerequisite: consent of the instructor.

585 Seminar in the History of United States Foreign Relations (3) F

Prerequisite: consent of the instructor.

590 History and Historians (3) F

Prerequisite: consent of instructor. A study of the writings, personalities, and philosophies of representative historians from Herodotus to the present.

598 Thesis (3) F, S (formerly 591)

Prerequisite: consent of instructor. May be repeated for credit.

599 Independent Graduate Research (3) F, S

Open to graduate students in history with the consent of the department chairman. May be repeated for credit.

JOURNALISM EDUCATION

(Offered by the Department of Communications)

442 Teaching Journalism in the Secondary School (2) S

Prerequisite: Education 311, Education 340, admission to teacher education, or consent of the instructor. The student who has not had teaching experience must

Latin

register concurrently in Education 449. See page 144 under Secondary Education for description of Standard Teaching Credential program. Theory and technique of advising school newspaper and yearbook staffs and teaching journalism. Relation of classroom instruction to staff assignments.

499 Independent Study (1-3) F, S

Prerequisite: consent of department chairman. Individually supervised projects relating to journalism education.

749 Student Teaching in Journalism in the Secondary School and Seminar (6) F, S

See page 144 under Secondary Education for description and prerequisites.

LATIN

(Offered by the Department of Foreign Languages and Literatures)

101 Fundamental Latin (3) F

Intensive practice to develop a comprehensive reading knowledge and a fundamental writing ability in Latin. Modern techniques of language instruction will be applied.

102 Fundamental Latin (3) S

Prerequisite: Latin 101 or equivalent. Intensive practice to develop a comprehensive reading knowledge and a fundamental writing ability in Latin. Modern techniques of language instruction will be applied.

203 Intermediate Latin (3) F

Prerequisite: Latin 102 or equivalent (2 years of high school Latin). Intensive reading and writing. Selected prose and poetry from the Golden Age. Audio-lingual techniques of language learning are used when applicable.

204 Intermediate Latin (3) S

Prerequisite: Latin 203 or equivalent (3 years of high school Latin). Intensive reading and writing. Selected prose from the Silver and Middle Ages. Audio-lingual techniques of language learning are used when applicable.

LINGUISTICS

341 Phonetics (3) F

(Same as Speech 341, Drama 341.)

375 Philosophy of Language (3) F

(Same as Philosophy 375.)

402 Phonetic Analysis of Speech (3) S

(Same as Speech 402.)

404 General Semantics (3) S

(Same as Speech 404.)

406 Descriptive Linguistics (3) F

Introduction to the nature of human linguistic behavior. Phonological, morphological, and syntactic structures of languages are examined through the use of techniques developed for the description of such structures.

410 Language and Culture (3) S

(Same as Anthropology 410.)

490 Linguistics in Relation to Other Disciplines (1-4) F, S

The mutually contributing relationships between linguistics and the social and natural sciences, literature, music, psychology, philosophy, mathematics, and language pedagogy. To be taken for one unit of credit for four semesters by majors in linguistics. Open to all upper division students.

505 Seminar: Phonetics and Phonemics (3) F

Prerequisites: Anthropology or linguistics 406 or consent of instructor. Study of various kinds of phonological systems that occur in languages. Emphasis on practical problems in the phonetic and phonemic analysis of selected language data.

507 Seminar: Morpho-syntax (3) S

Prerequisites: Anthropology or linguistics 406 or consent of instructor. The study of word formation and sentence construction in a variety of languages. Application of immediate constituent, tagmemic, and transformational analysis to selected linguistic data.

530 Historical Linguistics (3) S

(Same as French, German, Spanish 530.)

MATHEMATICS *

110 Methods and Concepts of Mathematics (3) F, S

Prerequisites: 2½ years of high school mathematics, including one year of algebra and one year of geometry. Selected topics in algebra, number theory, geometry, set theory, probability and analysis with special emphasis on the ideas and methods involved. Not open for credit to mathematics majors.

120 Finite Mathematics (3) F, S

Prerequisites: three years of high school mathematics or its equivalent. This is a course comprising introductions to the following topics: logic, set theory, matrices, and probability. It is particularly suited to students of economics, the biological and social sciences.

150A,B Analytic Geometry and Calculus (4,4) F, S

Prerequisites: four years of high school mathematics inclusive of trigonometry and a passing score in the placement test. An introduction to analysis including analytic geometry, functions, continuity, differentiation, the definite integral, integration, applications.

250A,B Intermediate Calculus (3,3) F, S

Prerequisites: Math 150A-B or equivalent. A continuation of Math 150. Topics include Taylor's theorem, infinite series, functions of several variables, partial differentiation, multiple integrals, linear differential equations.

291 Linear Algebra (3) F, S

Prerequisite: Math 150B. The study of matrices, determinants, vector spaces, linear transformations.

302 Modern Algebra (3) S

Prerequisite: Math 291. The integers, rational numbers, real and complex numbers, polynomial domains, introduction to groups, rings, integral domains and fields.

* Prerequisites may be waived in any mathematics course by the consent of the instructor.

Mathematics

304 Mathematical Logic (3) F, S

Prerequisite: Math 150B. An introductory course in the elements of mathematical logic.

305 Elements of Set Theory (3) F

Prerequisite: Math 250B or Math 291. Operations on sets; functions; cardinals and ordinals; ordering, well ordering; axiom of choice; transfinite numbers.

310 Ordinary Differential Equations (3) F, S

Prerequisite: Math 250B and Math 291. An introduction to existence theorems and the theory of ordinary differential equations.

314 Elementary Topology (3) S

Prerequisite: Math 250B. An introductory course in point set and algebraic topology.

315 Euclidean Geometry (3) F

Prerequisite: Math 250B. Selected topics in advanced Euclidean geometry such as convexity, transformation theory and n -dimensional Euclidean space.

320 Projective Geometry (3) F, S

Prerequisite: Math 291. Homogeneous coordinates, projective group, cross-ratio, duality, point and line conics.

330 Number Theory (3) S

Prerequisite: Math 250B or Math 291. Divisibility, congruences, prime number theory, Diophantine problems.

335A,B Probability and Mathematical Statistics (3,3) F, S

Prerequisite: Math 250B. An introductory course in probability theory in and its applications, based on use of the calculus.

340 Numerical Analysis (3) F, S

Prerequisites: Math 250B and 291. Interpolation and approximation. Numerical differential and integration. Solution of linear and nonlinear equations. Numerical solutions of ordinary and differential equations.

350A,B Advanced Calculus (3,3) F, S

Prerequisite: Math 250B, Math 291. Designed to introduce the student to rigorous proofs in analysis. Topics include the real number system, continuity, differentiation and integration of functions of several variables, infinite integrals and series.

407A,B Abstract Algebra (3,3) F, S

Prerequisite: Math 302. Sets, mappings, groups, rings, modules, fields, homomorphisms, advanced topics in vector spaces and theory of linear transformations, matrices, algebras, ideals, field theory, Galois theory.

412A,B Complex Analysis (3,3) F, S

Prerequisite: Math 350A. Complex differentiation and integration, Cauchy's theorem and integral formulas, maximum modulus theorem, harmonic functions, Laurent series, analytic continuation, entire and meromorphic functions, conformal transformations and special functions.

425A,B Differential Geometry (3,3) F, S

Prerequisite: Math 350A. Manifolds, curves and surfaces in Euclidean three-space, hypersurfaces of R^n , tensors and forms, Riemannian manifolds and submanifolds, topics in Riemannian geometry.

430 Partial Differential Equations (3) F, S

Prerequisite: Math 350B. Cauchy-Kowalewsky and other existence theorems, theory of first order equations, classification of equations of higher order, detailed study of elliptic, hyperbolic and parabolic equations, applications of functional analysis to partial differential equations.

450A,B Real Analysis (3,3) F, S

Prerequisite: Math 350A. An introductory course in modern functional analysis. Measure theory, differentiations and theories of integration. Hilbert and Banach spaces, linear transformations and spectral theories.

499 Independent Study (1-3) F, S

Prerequisite: consent of the instructor. Study of some special topic in mathematics, selected in consultation with the instructor and carried out under his supervisions.

MATHEMATICS EDUCATION

(Offered by the Department of Science and Mathematics Education)

100A,B Fundamental Concepts of Mathematics—Arithmetic (3,3) F, S

Prerequisites: one year of algebra and one year of geometry. The structure of the real number system and its subsystems. Numeration systems. Elementary number theory. Equations and inequalities. Elementary set theory and logic.

300 Fundamental Concepts of Mathematics—Algebra (3) F

Prerequisite: Math 150B. Selected topics in modern algebra. Axiomatic construction of algebraic structure. Linear systems of equalities and inequalities. Combinatorial analysis. Truth-functional logic.

301 Fundamental Concepts of Mathematics—Geometry (3) F

Prerequisite: Math 150B. Selected topics in elementary geometry. The study of various axiom systems for Euclidean geometry; non-Euclidean geometry; projective, metric, and affine geometry.

432 Teaching Mathematics in the Elementary School (2) F, S

Prerequisite: Math Educ 100B. Objectives, content, materials, pupil experiences, methods of instruction, and evaluation in arithmetic. The nature and scope of arithmetic in the elementary school.

442 Teaching Mathematics in the Secondary School (2) S

Prerequisites: Education 311, Education 340, Admission to Teacher Education, senior standing, or consent of the instructor. Objectives, methods, and materials for teaching mathematics in secondary schools. Required, before student teaching, of students presenting majors in mathematics for the general secondary credential. The student who has not had teaching experience must register concurrently in Educ 449. The requirements for the major must include Math Educ 100B, 300, and 301. (1 hour lecture, 2 hours activity)

749 Student Teaching in Mathematics in the Secondary School and Seminar (6) F, S

See page 144 under Secondary Education for description and prerequisites.

750 Seminar in Mathematics Education (2) F, S

Prerequisites: Graduate standing and consent of the instructor. Study of selected problems in elementary or secondary education. May be repeated for credit.

Music

MUSIC

100 Introduction to Music (3) F, S

A basic approach to listening to music with understanding and pleasure through a general survey of musical literature representative of various styles and performance media. Music will be related to other arts through lectures, recordings, and concerts. Closed to music majors.

101 Music Theory for Nonmusic Majors (3) F, S

Basic theory and practical applications to further understanding of basic music principles and to improve music performance and listening skills. Includes sight-singing and relationship to keyboard and simple melodic instruments. Closed to music majors.

111A,B Music Theory (3,3) F, S

A year course covering diatonic harmony and musicianship. Includes scales and intervals, triads and their inversions, harmonizations, nonharmonic tones, modulation and dominant seventh chords. Practical applications, to include sight singing, dictation and keyboard harmonizations. (2 hours lecture, 2 hours activity)

151A,B Survey of Musical Literature (2,2) F, S

Open to music majors and minors and qualified students by consent of instructor. Two hours lecture, one hour listening. An introductory course for majors in the study of the history and literature of music in Western civilization. Students must be able to read music as a part of the analysis of form, design and style.

161a, 361a Symphony Orchestra (1) F, S (1,1,1,1) (1,1,1,1)

Open by audition to college students and qualified adults in the community. Performance of standard representative symphonic works. (More than 3 hours major production)

161b, 361b College Choir (1) F, S (1,1,1,1) (1,1,1,1)

Open to all college students. Study and performance of standard representative choral literature works. (More than 3 hours major production)

161c, 361c Symphonic Band (1) F, S (1,1,1,1) (1,1,1,1)

Open by audition to college students and qualified adults in the community. Performance of standard representative symphonic band literature. (More than 3 hours major production)

161d, 361d Opera Theatre (1) F, S (1,1,1,1) (1,1,1,1)

Study of roles and representative excerpts from standard and contemporary operas and the basic musical, dramatic and language techniques of the musical theatre. Performance of operatic excerpts and complete operas. (More than 3 hours major production)

161e, 361e College Singers (1) F, S (1,1,1,1) (1,1,1,1)

Membership restricted to advanced voice students or those passing voice test. Performs finest representative choral literature. (More than 3 hours major production)

162b, 362b Wind Ensemble (1) F, S (1,1,1,1) (1,1,1,1)

Open to qualified wind students by audition or consent of the instructor. Performs representative wind ensemble literature. (2 hours activity)

Music

162c, 362c Vocal Ensemble (1) F, S (1,1,1,1) (1,1,1,1)

Study and performance of choral literature of the Renaissance and Baroque periods. Open only to students by audition. Public performance required. (2 hrs. activity)

163, 363 Chamber Music Ensembles (1) F, S (1,1,1,1) (1,1,1,1)

Open to all qualified wind, string, or keyboard students. Various ensembles will be formed to study, read, and to perform representative chamber literature of all periods. (2 hrs. activity)

170, 370 Individual Instruction, Principal Instrument or Voice (1) F, S (1,1,1,1) (1,1,1,1)

Prerequisite: 2 semesters MU 171-177 or MU 371-378 or recommendation of the faculty jury in performance. Individual instruction in the principal performance field for intermediate and advanced students.

171-178, 371-378, 571-577 Studio (Private Instruction) Principal Instrument or Voice (1) F, S (1,1,1,1) (1,1,1,1) (1,1)

Individual on-campus lessons with approved instructors. One unit per semester required of all music majors in the principal performing field. 500-level courses provide advanced training in the technique and repertoire at the graduate level in the student's principal performance medium. Required of graduate students whose terminal project is the graduate recital. Special fee.

171, 371, 571 Voice, Intermediate and Advanced

172a, 372a, 572a Violin, Intermediate and Advanced

172b, 372b, 572b Viola, Intermediate and Advanced

172c, 372c, 572c Cello, Intermediate and Advanced

172d, 372d, 572d String Bass, Intermediate and Advanced

172e, 372e, 572e Harp, Intermediate and Advanced

172f, 372f, 572f Guitar and/or Lute, Intermediate and Advanced

173a, 373a, 573a Oboe, Intermediate and Advanced

173b, 373b, 573b Flute, Intermediate and Advanced

173c, 373c, 573c Clarinet, Intermediate and Advanced

173d, 373d, 573d Bassoon, Intermediate and Advanced

174a, 374a, 574a Trumpet, Intermediate and Advanced

174b, 374b, 574b Trombone and Baritone, Intermediate and Advanced

174c, 374c, 574c French Horn, Intermediate and Advanced

174d, 374d, 574d Tuba, Intermediate and Advanced

175, 375, 575 Percussion, Intermediate and Advanced

176a, 376a, 576a Piano, Intermediate and Advanced

176b, 376b, 576b Organ, Intermediate and Advanced

377, 577 Composition, Advanced

378 Conducting, Advanced

184A,B Piano Class for Teachers (1,1) F, S

Prerequisite: MU 101. Elementary and intermediate instruction in basic piano techniques, with special emphasis on application to appropriate song materials and simple accompaniments used in the elementary school. Required of candidates for general elementary credential who specialize in music and those preparing to teach in kindergarten and first grades. (2 hours activity)

Music

211A,B Music Theory (3,3) F, S

Prerequisite: Mu 111B, or equivalent. A year course covering secondary dominants, diminished 7th, 9th, 11th, and 13th chords, sequence and chromatic chords. Practical applications to include sight singing, melodic and harmonic dictation, and keyboard harmonizations. (2 hours lecture, 2 hours activity)

281 Orchestral Instruments (2)

Required of all music degree candidates and for music teaching credentials. May be repeated for a maximum of 8 units. (4 hours activity)

281a String Instruments (2) F

Specialization on violin, with related work on standard instruments of the string family. (4 hours activity)

281b Woodwind Instruments (2) F

Specialization on clarinet, with related work on standard instruments of the woodwind family. (4 hours activity)

281c Brass Instruments (2) S

Specialization on trumpet, with related work on standard instruments of the brass family. (4 hours activity)

281d Percussion Instruments (2) S

Specialization on snare drum, with related work on standard instruments of the percussion family. (4 hours activity)

281e Survey of Orchestral Instruments (2) F, S

A general survey of orchestral instrument practices for elementary credential candidates. (4 hours activity)

282A,B Piano Class for Music Majors (1,1) F, S

Prerequisite: declaration of the music major and consent of instructor. Designed to meet music major piano requirements for degree and teaching credentials. Fundamentals of keyboard technique for students whose major performance field is not piano. Not required for piano majors. (2 hours activity)

283A,B Voice Class for Music Majors (1,1) F, S

Prerequisite: declaration of the music major and consent of instructor. Designed to meet voice requirement for instrumental and piano majors and to prepare candidates for proficiency requirement for teaching credential. Not required for voice majors. (2 hours activity)

312A,B Counterpoint (2,2) F, S

Prerequisites: Music 111A,B and 211A,B. Basic 18th century counterpoint in two, three and four parts, double counterpoint, canon, and fugue forms.

321A,B Form and Analysis (2,2) F, S

Prerequisite: consent of instructor. Analysis of structural elements of music such as motive, phrase, and period; binary, ternary, rondo, sonata-allegro and larger musical forms in representative musical works.

322A,B Composition (2,2) F, S

A—Prerequisite: elementary counterpoint, Mu 211B or consent of instructor. Ear training, analysis of smaller forms, simple composition of two three-part song form styles. B—Analysis and writing of more complex musical forms.

323A,B Orchestration (2) S

Prerequisite: Mu 211B and consent of instructor. Writing and analysis of orchestral music.

333 Music and Child Development (3) F, S

Prerequisite: Mu 101 or equivalent or successful completion of proficiency test. Study of the relationship of music to child growth and development, with emphasis on the child from 5 to 12.

350 Music in Our Society (3) F, S

Prerequisite: Mu 100 or consent of instructor. Designed to increase interest and an understanding of music in its relation to our general culture. Emphasis on structure, analysis and aesthetic principles through the study of masterpieces of musical literature of various historical periods.

351A,B History and Literature of Music (3,3) F, S

Prerequisites: Mu 351A, History and Literature of Music. A—A study of the history and literature of music from early Greek beginnings through the Renaissance. B—A study of the history and literature of music covering the Baroque, Classic, Romantic period and the 20th century. (Required of all music majors.)

382A,B Piano Class for Music Majors (1,1) F, S

Prerequisite: Mu 282B. Continuation of piano requirement for qualified upper division students. Specific preparation for piano functional examination. (2 hours activity)

385A,B Voice Class for Elementary Teachers (1,1) F, S

Basic techniques of singing, adaptation of the adult voice for singing with children. Emphasis on singing materials from children's music books used in the elementary school. Primarily intended for candidates for elementary credential. (2 hours activity)

386 Piano Accompanying (1) F, S

The study and application of playing accompaniments for instrumentalists, vocalists, and ensembles. Participation in rehearsals, recitals, and concerts required. (2 hours activity)

390 Diction for Singers (1) F, S

This course is designed to teach proper singing diction in English, Italian, French and German, but may not be considered a substitute for formal language study. Examples from standard vocal literature explained through use of International Phonetic Alphabet.

391A,B Choral Conducting (2,2) F, S

Principles, techniques, and methods of conducting choral groups. Laboratory work with class and vocal ensembles, using standard choral repertoire. Required of all music education majors. (4 hours activity)

392A,B Instrumental Conducting (2,2) F, S

Prerequisite: MU 391A. Principles, techniques, and methods of conducting orchestral and band groups. Laboratory experience in conducting instrumental groups, using standard instrumental literature. (4 hours activity)

436 Survey of Song Literature and Repertoire (2) S

Study and performance of representative styles and schools of vocal music literature. Emphasis on performing and listening. Building concert repertoire. Materials include 18th-, 19th-, 20th-century music.

Music

451 Music of the Baroque Period (2) F

Prerequisite: Mu 351A,B or consent of instructor. Musical forms, styles, and performance practices of the Baroque period. Detailed analysis of significant representative works. (2 hours lecture and discussion, 1 hour weekly listening)

452 Music of the Classic and Romantic Period (2) S

Prerequisite: Mu 351A,B or consent of instructor. A study of the history and literature of music from approximately 1750 to 1900. Detailed analysis of important representative works. (2 hours weekly lecture and discussions, 1 hour per week) listening.

453 20th Century Music (2) S

Prerequisite: Mu 351A,B or consent of instructor. Developments in the music of western Europe and the western hemisphere since 1890. Intensive study of contemporary music and its structure.

456 Opera History and Literature (2) (Planned for 1968-69)

The course will cover opera history, including its predecessors to the present day, with representative examples of literature from all periods.

457 Song Literature (2) (Planned for 1968-69)

Course will provide a basic knowledge of art song literature in terms of period style and nationality.

458 Collegium Musicum Practicum (2) S

The study and performance of rare and old music, both instrumental and vocal. Techniques of musical research will be applied. Students should be competent performers.

498 Senior Recital (1) F, S

Advanced individual instruction in the principal performance field leading to the successful presentation of a public senior recital.

499 Independent Study (1-3) F, S (Formerly Mus Ed 430)

Study of a special topic in Music selected in consultation with the instructor and carried out under his supervision. May be repeated for credit.

500 Introduction to Graduate Study in Music (2) F, S

Required of all graduate music majors. Study of basic bibliography, literature, and research techniques and materials useful in graduate music study.

522 Contemporary Techniques of Composition (2) S

Advanced techniques of composition, as applied to the student's area of graduate specialization.

523 Advanced Orchestration (2) S

Prerequisite: Mu 323B. Analysis and practice of traditional and contemporary orchestration techniques. Scoring of music for large ensembles such as orchestra, band, chorus and orchestra, or band and orchestra.

550 Seminar in Music History (2) F

Prerequisites: At least two from the following: Mu 451, 452, and/or 453, and consent of instructor. Detailed investigation and analysis of specific developments in musicology including exercises in transcriptions from old notations and historical investigations prepared by members of the seminar.

558 Collegium Musicum (2) S

Prerequisite: Permission of instructor. Advanced studies in the performance of rare and old music. (see MU 458 for general description). May be repeated for credit.

591 Advanced Choral Conducting and Interpretation (2) F

Prerequisite: Mu 391B, conducting experience, or consent of instructor. Advanced problems in choral conducting techniques, with emphasis on laboratory work with student groups and in concert conducting. (4 hours activity)

592 Advanced Instrumental Conducting and Interpretation (2) S

Prerequisite: Mu 392B, conducting experience, or consent of instructor. Advanced study of baton technique with emphasis on interpretive and stylistic problems in the conducting of major works. (4 hours activity)

597 Project (3-6) F, S (formerly 598)

Systematic study and report of a significant undertaking in the area of musical composition, musical performance, or other related creative activity. A written critical evaluation of the work or activity will be required.

598 Thesis (3-6) F, S

Individual investigations of specific problems in the area of concentration by candidates for the M.A. degree.

599 Independent Graduate Research (1-3) F, S

Prerequisite: graduate standing in music and permission of instructor. Research and study projects in areas of specialization beyond regularly offered course work. Oral and written reports required.

MUSIC EDUCATION

435 Children's Literature in Music (2) F, S

Prerequisite: Mu 333 or consent of instructor. A survey of books and listening materials for preschool and elementary age children, with techniques of presentation. Designed for the classroom teacher or general student.

Music Education Techniques Block: *

*** 441 Teaching Music Theory and Appreciation in the Public Schools (2) F**

Prerequisite: 20 units in music, Educ Found 311, or consent of instructor. Required of all music majors working for the standard teaching credential, secondary specialization. The history and organization of the teaching of music theory and appreciation in the public schools. Interrelation of general and specialized classes and their place in the total school program. Music literature, materials, and techniques for producing effective musical growth. (2 hours lecture)

*** 442 Teaching Vocal Music in the Public Schools (2) S**

Prerequisites: 20 units in music to include Mu 391A (for those doing student aide), Educ Sec 340, Educ Found 311, Admission to Teacher Education, senior standing or consent of the instructor. See page 144 under Secondary Education for description of standard teaching credential program. Objectives, methods, and

* MU 441, 442 and 443 are scheduled as an integrated course in music education techniques. Students must take in the semester immediately preceding student teaching (ordinarily the first semester of the postgraduate year) and must allow two hours daily in their schedules to take the class and to complete fieldwork assignments. Students without teaching experience must take Educ 449 Teacher Aide Assignment (1) concurrently and must allow sufficient time in their schedules at the same hour each day so that they can serve as teacher aides in public schools.

Philosophy

materials including audiovisual instruction for teaching music in the secondary schools. The history and organization of the teaching of vocal and choral music in public education. Planning sequential vocal training and performance organizations for the total school program. Study of choral literature and techniques of instruction. (2 hours lecture)

* 443 Teaching Instrumental Music in the Public Schools (2) S

Prerequisite: 20 units in music, Educ Found 311, senior standing or consent of instructor. Required of all music majors working for the standard teaching credential, secondary specialization. The history and organization of the teaching of instrumental music in public education. Study of music literature and appropriate curricula for the development of concert bands, symphony orchestras, and chamber music ensembles for the total school program. (2 hours lecture)

532 Seminar in Music Education (2) S

Studies in the trends and application of educational theory in relation to the teaching of music in the public schools.

544 Curriculum Planning and Construction in Music (2) S

Principles and practices of curriculum planning in music education, with special reference to the public elementary, junior and senior high school. Required of majors who intend to complete supervision credential.

545 Supervision and Administration of Music in the Public Schools (2) S

Open to music education majors with teaching experience. Philosophy, principles and practices of supervision of music in the public elementary and secondary schools. Emphasis on modern principles of leadership, types of services, organization, management and evaluation of programs of instruction. Required of candidates for supervisory credential.

749 Student Teaching in Music in the Secondary School and Seminar (6) F, S

Prerequisite: MU 441, 442, 443 and Educ. 449.

See page 144 for description.

PHILOSOPHY

100 Introduction to Philosophy (3) F, S

An introduction to the nature, methods and some of the main problems of philosophy.

110 Comparative Study of the World's Great Religions (3) F, S

A study of man's religious impulse as viewed from the philosophical standpoint. An attempt will be made to analyze and to compare religious experience as expressed in Christianity, Islam, Buddhism, Hinduism, etc.

210 Logic (3) F, S

Analysis of the various forms given to propositions and the basic requirements necessary for valid inference.

211A Classical Schools of Philosophy (3) F

Classical emphases concerning metaphysics, knowledge and related inquiries.

* MU 331, 442 and 443 are scheduled as an integrated course in music education techniques. Students must take in the semester immediately preceding student teaching (ordinarily the first semester of the postgraduate year) and must allow two hours daily in their schedules to take the class and to complete fieldwork assignments. Students without teaching experience must take Educ 449 Teacher Aide Assignment (1)* concurrently and must allow sufficient time in their schedules at the same hour each day so that they can serve as teacher aides in public schools.

211B Classical Schools of Philosophy (3) S

Classical emphases concerning man's social relations and human values.

250 Philosophy of Ideas (3) F, S

Analysis of basic ideas which have shaped modern thought.

310 Ethics (3) F, S

An analysis of the problems of human conduct: motivation, valuing, norms, social demands, and personal commitments.

311 Philosophy of Art (3) F, S

An investigation into the conditions and the aims of aesthetic experience.

323 Contemporary Existentialism (3) F

An analysis of the meaning of the existentialism in modern philosophy.

331 History of Philosophy: Rationalism and Empiricism (3) F

The rationalism of Descartes, Spinoza, and Leibniz, and the empiricism of Locke, Berkeley, and Hume.

332 History of Philosophy: Kant and the 19th Century (3) S

The empiriristic and rationalistic influences on Kant, followed by a study of the major trends in 19th-century philosophy.

340 Theory of Knowledge (3) F

An investigation of the concepts of knowledge, belief and certainty, and a study of representative theories concerning man's knowledge of the external world, the past, and other minds.

347 Selected Problems in Philosophy (3) F

An investigation into the significant contributions made to human culture through philosophic analysis.

368 Symbolic Logic (3) F

The recognition and construction of correct deductions in the sentential logic and the first-order predicate calculus with identity.

375 Introduction to Philosophy of Language (3) F

An introduction to the major issues in semantical theory: truth, meaning, analytic-synthetic, semiotics.

380 Introduction to Phenomenology (3) F

An investigation into the historical background and basic viewpoints which have provided a framework for philosophical research and study in the writings of Husserl, Heidegger, Sartre, and Merleau-Ponty.

382 Contemporary Philosophy (3) F

A survey and analysis of the main trends of 20th century philosophy. Emphasis will be placed on such trends as pragmatism, linguistic analysis, and existentialism.

407 Seminar in Basic Concepts of Philosophy and Psychology (3) F, S

Prerequisites: three units in both philosophy and psychology. An interdisciplinary study of significant interrelationships which obtain between basic concepts common to both philosophy and psychology.

Philosophy

412 Metaphysics (3) S

An examination of the philosophical problems of freedom and determinism, mind and body, time and becoming, causation, deity, substratum, personal identity.

417A Seminar in Aristotle's Scientific and Speculative Views (3) F

An intensive study of the great philosopher's views concerning the nature and function of science, logical reasoning, and the status of universals.

417B Seminar in Aristotle's Social and Aesthetic Views (3) S

A study of the problems of human conduct, government and art.

427A Seminar in Spinoza's Ethics and Metaphysics (3) F

A detailed and critical study of Spinoza's views concerning the nature of man and the problems of conduct as developed in the *Ethics*.

427B Seminar in Spinoza's Political Theory (3) S

A detailed and critical study of the *Tractatus Politicus* and the *Tractatus Theologico-Politicus*.

437A Seminar in the Philosophy of William James (3) F

A detailed study of James' psychological and epistemological views.

437B Seminar in the Philosophy of William James (3) S

A detailed study of James' social, ethical, and religious views.

447A Seminar in the Development of Plato's Philosophy (3) F

A critical and detailed study of the early and middle *Dialogues*, terminating with *The Republic*.

447B Seminar in Plato's Later Dialogues (3) S

A critical and detailed study of the later *Dialogues* which follow *The Republic*, terminating with *The Laws*.

450 Philosophy of Science (3) S

An investigation into the methodologies of the deductive and inductive sciences.

451 Philosophical Backgrounds of Modern Literature (3) F, S

(Same as English 451.)

457A Seminar in Hume's Philosophy of Science (3) F

A detailed study of Book I of the *Treatise on Human Nature* and the *Enquiry Concerning Human Understanding*.

457B Seminar in Hume's Ethical Views (3) S

A detailed study of the *Dialogues Concerning Natural Religion* and the *Enquiry Concerning the Principles of Morals*.

460 Philosophy of History (3) S

A study of the metaphysical and the logical problems of history.

467A Kant's Theory of Knowledge (3) F

A critical and detailed study of *The Critique of Pure Reason*.

467B Kant's Theory of Ethics and Aesthetics (3) S

A critical and detailed study of *The Critique of Practical Reason* and *The Critique of Judgment*.

470A Seminar in Analytic Philosophy (3) F

Prerequisite: six units in philosophy. A detailed investigation of the works of some of the many figures of the 20th century movement in analytic philosophy. The works of Russell, Moore, Wittgenstein, Strawson, Ryle will be read.

470B Seminar in Contemporary Philosophy (3) S

Prerequisite: six units in philosophy. Emphasis will be on the analytic movement in philosophy as it developed in the United States during the 20th century. The works of philosophers such as C. I. Lewis, Quine, Goodman, White, Pap will be read.

490 Seminar in Philosophy of Language (3) S

Prerequisite: Philosophy 375. A detailed examination of the problems in the theory of meaning and formal semantics.

499 Independent Study (1-3) F, S

Prerequisites: minimum of 12 units in philosophy and approval of the department. Such study is designed to develop greater competency in research. May be repeated for credit.

502 Philosophy of Mind (3) F

Prerequisite: Philosophy 331, 332, or 412; consent of instructor. Basic problems relating to the analysis of the concept of mind and such related issues as behavior, consciousness, and voluntary action.

507 Seminar in Theory of Valuing (3) S

Prerequisite: Philosophy 310, or consent of the instructor. An investigation into the conditions, modes, levels, and criteria relevant to any systematic view of valuing.

PHYSICAL SCIENCE

(Offered by the Departments of Chemistry and Physics)

201 Modern Physical Science (4) F, S

Prerequisite: one year of high school algebra or equivalent, or permission of the instructor. Taught jointly by the departments of chemistry and physics, this course presents the essential unifying features of the basic physical sciences, chemistry, chemistry and physics; the modern concepts of the physical and chemical theory of atomic and molecular structure form the unifying course material. Selected physical and chemical theory (from the fields of mechanics, electricity and magnetism, light, kinetic theory, thermodynamics, quantum theory, and inorganic and organic chemistry) are included to provide the necessary background material. Credit will not be given to students who have had a college course in chemistry or physics.

PHYSICS *

101 Freshman Seminar (1) F

Introduction to physics: a series of seminars, in lecture and discussion form, concerning careers in physics and the applied sciences, professional activities of today's scientists, and special topics of current interest in physics research and development. Field trips to academic and industrial establishments are included. (1 hour seminar or one field trip per week)

* For all courses, prerequisites not requiring consent of the department chairman may be waived by the instructor of the course if he is satisfied that the student is qualified to undertake the course. A grade of C or better is required for all prerequisite courses.

Physics

201 Modern Physical Science (4) F, S (See course description under Physical Science 201)

211A,B Elementary Physics (3) F, S

Prerequisites: high school algebra, $1\frac{1}{2}$ years; trigonometry, $\frac{1}{2}$ year. Elementary physics taught without the use of calculus. Covers principally the fields of mechanics, thermodynamics and electricity and magnetism in the first semester, and principally the fields of waves, relativity, quantum mechanics and the search for the ultimate constituents of matter in the second semester.

Concurrent enrollment in 212A,B laboratory required.

212A,B Elementary Physics (1) F, S

Laboratory for 211A,B. Concurrent enrollment in 211A,B lecture required. (3 hours laboratory per week)

221A Fundamental Physics (4) F, S

Prerequisite: Math 150A; corequisite: Math 150B. Fundamental classical physics including mechanics, heat and thermodynamics, acoustics, and wave motion.

Concurrent enrollment in 222A laboratory required.

222A Fundamental Physics (1) F, S

Laboratory for 221A. Concurrent enrollment in 221A lecture required. (3 hours laboratory per week)

221B Fundamental Physics (4) F, S

Prerequisite: Physics 221A. Fundamental classical and modern physics, including physical optics, electricity and magnetism, and an introduction to modern physics.

Concurrent enrollment in 222B laboratory required.

222B Fundamental Physics (1) F, S

Laboratory for 221B. Concurrent enrollment in 221B lecture required. (3 hours laboratory per week)

221C Fundamental Physics (3) F, S

Prerequisite: Physics 221B. Fundamental physical concepts are presented in a unifying framework, using the postulational approach. The five major theories—classical mechanics, relativity, electricity, quantum mechanics, and statistical mechanics—form the principal material for this course, which is designated for the student who has just completed the 10-unit sequence, Physics 221A and 221B.

411 Theory of Wave Motion (3) S

Prerequisites: Physics 221B, Mathematics 150B. The properties of wave motion—production, propagation, refraction, diffraction, interference, and transmission through surfaces of waves—as applied to mechanics, electromagnetism and quantum mechanics.

416 Thermodynamics (3) S

Prerequisites: Physics 221B, Mathematics 250B. A postulational study of thermodynamics with emphasis on thermodynamic states rather than on thermodynamic processes. An introductory course in the basic concepts and postulates, conditions of equilibrium, formal relationships, processes and thermodynamic engines, stability of thermodynamic systems, first- and second-order phase transitions, the Nernst postulate, and representative applications.

431 Electricity and Magnetism (3) F

Prerequisites: Physics 221B, Mathematics 250B. Theories of electrostatics, electrodynamics, and electromagnetic waves. Introduction to magnetohydrodynamics.

441 Analytical Mechanics (3) S

Prerequisites: Physics 221B, Mathematics 250B. Principles of Newtonian mechanics applied to the statics and dynamics of particles and rigid bodies. Introduction to Lagrangian and Hamiltonian equations.

451 Modern Physics (3) S

Prerequisites: Physics 221B, Mathematics 250B. Discussion of experiments and introduction to theory for selected topics in atomic, nuclear, and solid state physics.

452 Introductory Radiology (3) S

Prerequisite: one year college physics. X-rays, radioactivity, interaction of radiation with matter, detection of radiation, applications to health physics. Especially suitable for biology, chemistry, and premedical students who expect to work in radiation biology, radiation chemistry, or medical radiology.

453 Nuclear Physics (3) F

Prerequisites: Physics 221B, Mathematics 250B. Properties of nuclei, radioactivity, elementary particles, nuclear reactions. Introductory discussion of theories of nuclear structure and nuclear processes.

454 Introduction to the Solid State of Matter (3) F

Prerequisite: one course in atomic or nuclear physics, differential equations. An introduction to the physical properties of matter in the solid state, as explained by atomic theory. Crystal structure, thermal, electric, and magnetic properties of metals, semiconductors, band theory, and solid state devices.

455 Introduction to Quantum Physics (3) S

Prerequisites: Physics 431, Physics 441, differential equations. An introduction to the concepts and theory of quantum physics.

471 Electronic Circuit Theory (3) F

Prerequisites: Physics 221B, Mathematics 250B. Operating characteristics of vacuum tubes, transistors, and semiconductor diodes. Linear circuit theory for alternating currents and for transient currents. Introduction to switching and pulse circuits.

481A Experimental Physics (3) F

Prerequisite: Physics 221B; corequisite: Physics 431. Selected experiments in electrical measurements and electronics, with emphasis on precision of measurement and standardization of instruments. (1 hour lecture, 6 hours laboratory per week.)

481B Experimental Physics (3) S

Prerequisite: Physics 481A; corequisite: Physics 441. Selected experiments in mechanics, acoustics, physical optics, and atomic spectra. (1 hour lecture, 6 hours laboratory per week.)

481C Experimental Physics (3) F

Prerequisite or corequisite: one course in nuclear or modern physics. Selected experiments in atomic and nuclear physics. (1 hour lecture, 6 hours laboratory per week.)

481D Experimental Physics (3) S

Prerequisites: Physics 481A,B,C or consent of department chairman. Selected experiments in classical and modern physics. (1 hour lecture, 6 hours laboratory per week.)

Political Science

491 Senior Report (1) F, S

Prerequisite: Consent of department chairman. Selection and design for individual project, oral and written reports.

492 Senior Report (2) S

Prerequisite: Physics 491 and consent of department chairman. Laboratory work on individual project, oral and written progress reports, oral and written final report. (1 hour lecture-recitation and 6 hours laboratory per week)

499 Independent Study (1-3) F, S

Prerequisite: approval of study plan by department chairman and by instructor. Study of some selected topic in physics, selected in consultation with the instructor and carried out under his supervision. May be repeated for credit to a maximum of 6 units.

531 Electricity and Magnetism (3) F

Prerequisite: mathematics through partial differential equations. An advanced course in electromagnetic field theory beginning with Maxwell's equations. Treated are: vector and scalar potentials, boundary value problems, electrostatics, magnetostatics, wave propagation, and related topics.

541 Analytical Mechanics (3) S

Prerequisite: mathematics through partial differential equations. A thorough theoretical treatment of classical mechanics including the important motions of a point, general principles of work and energy, the principle of least action, Lagrange and Hamiltonian equations, the dynamics of rigid bodies, and related topics.

555 Quantum Physics (3) S

Prerequisite: mathematics through partial differential equations. A course in the theory of quantum physics including the physical bases of quantum physics, operator formulations, matrix mechanics, commutator bracket formulation, perturbation theory, quantum statistics.

POLITICAL SCIENCE *

Political Science 100 or its equivalent is the prerequisite for all upper division political science courses.

100 American Government (3) F, S

Structure and functions of the United States government; the federal system; the organization, powers and functions of the executive, legislative, and judicial branches; the relationship between federal, state and local units of government, the structure and functions of state and local government with special attention to California. This course satisfies the state requirements in U.S. Constitution and California state and local government.

101 Introduction to Politics and Government (3) F, S

An examination of political movements, their aims, strengths and ideologies. Contemporary issues at all levels of government; resultant patterns, with emphasis on their form in the United States and in California. This course satisfies the state requirement in U.S. Constitution.

231 Comparative Study of Political Systems (3) F, S

An introduction to the techniques and methods of comparative study, and examination of selected political systems.

* Prerequisites may be waived only with the consent of the instructor.

251 International Relations (3) F, S (Formerly 351)

A study of the diplomatic, political, economic, and cultural relations of nations; the modern systems of nation states; basic factors of power; sovereignty, nationalism; imperialism; colonialism, the rise to influence of the developing nations; the peaceful settlement of disputes.

306 Research Proseminar in Political Science (3) F, S

Basic research concepts, techniques, and design formats. Their relationship to data materials and analysis; and a presentation and examination of descriptive and inferential statistics and computer techniques and applications in political science.

311 State and Local Government (3) F, S

Development and role of state constitutions; the political, administrative and judicial systems of state, county, and city governments; relations of local governments to the state government, with special reference to California. This course satisfies the state requirement in California state and local government.

312 Political Parties in the U.S. (3) F, S

The American two-party system; party organization and conflicts, problems of party responsibility and party leadership, nominating procedures, campaign methods and finances; the role of parties in congressional and executive policies.

313 Pressure Groups and Public Opinion (3) F

The power and growth of farm, labor, business, and noneconomic pressure groups; interest group activity in Congress; administration and courts; public opinion and propaganda; voting behavior.

320 Introduction to Public Administration (3) F, S

The nature and scope of public administration and its role in a democratic society.

340 Democracy and Communism (3) F

Recommended for nonmajors. The democratic tradition, especially in the United States and Great Britain; the theory and practice of communism in Soviet Russia, Yugoslavia, and Red China; authoritarian political thought in Italy, Germany, and Spain.

341 Fundamental Principles of Political Theory (3) F, S

Problems of evidence and validation in political studies. The distinctions between empirical statements, value judgments and tautologies. The relationship of fact and value. The need for operational definitions. Systematic approaches to political philosophy, including those of Plato, Aristotle, St. Thomas, Hobbes, Locke, Rousseau, Bentham and Marx. The dilemma posed by positivism and relativism for the study of political values.

342 Specific Problems of Political Philosophy (3) S

Problems of making value judgments in politics: liberty v. security, the extent of obligations to the state, variations in forms of government, the role of government in the economy.

373 Constitutional Law and Civil Liberties (3) S (Formerly 473)

Case studies involving first amendment freedoms; equal protection of the laws; and procedural rights stemming from due process.

374 Constitutional Law and Governmental Power (3) F (Formerly 474)

Case studies involving the balance of power among courts, Congress, and the President; between national and state governments; and the extent of judicial review of laws involving social and economic problems.

Political Science

406 Scope and Theory of Political Science (3) S

The nature of the discipline, approaches, tools, concepts and theories. Highly recommended for all graduate students and senior political science majors.

412 The Art of Politics (3) F

Prerequisite: consent of the instructor. An examination of politics as it is practiced and understood by practitioners of the art. A seminar which features guest lecturers.

414 The Legislative Process (3) S

Prerequisite: Political Science 312. The nature of the legislative process in the United States including the organization and procedures of legislative bodies, direct legislation and the relationships of the legislative branch to other branches of government. Legislative systems will be analyzed comparatively.

415 Political Behavior (3) F

Prerequisites: Political Science 306, 312. The application of behavioral methodology to the understanding of individual political behavior within various U.S. governmental and social situations. The formation of attitudes and opinions, their measurement and relationship to political behavior.

416 The American Presidency (3) F, S

A study of the growth of the office and power of the President, of his relationship to his advisers and the executive departments. Congress and the courts, state governments and the public. The role of the President as chief policy-maker and administrator, party and public opinion leader, with particular attention to developments during international and domestic crises.

420 Local Government and Administration (3) F

Legal and historical framework of local government with emphasis on municipal government and the functional fields of management in the United States.

421 Government Finance Administration (3) S

Prerequisite: Political Science 320. The role of finance administration and budgeting in the determination of public policy, and in the administrative planning and management of governmental operations in the United States. Examines the relationship of assessment administration to governmental revenues and expenditures, the principles and practices of cost accounting, treasury management, and capital budgeting.

422 Public Personnel Administration (3) F, S

Prerequisite: Political Science 320. The growth and development of the civil service and the merit system; an evaluation of recruitment procedures and examinations; an analysis of such topics as position classification, salary structures, retirement plans, in-service training, employees organizations, and personnel supervision.

423 Regional Planning and Development (3) S

Prerequisite: Political Science 320. A study of governmental policies, procedures, and agencies involved in the planning and development of regions. The concept of regions, survey of regional problems, and objectives, developmental prospects of regions, emerging views of regional planning, and intra- and inter-regional investment allocation during the development process.

424 Urban Planning and Development (3) F

Prerequisite: Political Science 320. The origins and development of city planning; the legal bases and fundamental concepts of planning are defined; and the or-

ganization and administration of the planning activity are examined. The major elements of the general plan, zoning laws and administration, urban renewal, and capital programming are considered.

425 Comparative Public Administration (3) S

Prerequisite: Political Science 320.

A cross cultural comparison of the U. S. administrative system with those of selected nations; the development process; the role and functions of public administration in different cultural settings.

426 Government Organization and Management (3) F, S

Prerequisite: Political Science 320. An analytical examination of public administration organization, and the techniques and processes of public management; the growth and development of bureaucratic administration; the functions of administrative authority; and the importance of communication, coordination, and leadership to organizational action.

429 Government Internship (3) F, S

Prerequisites: Public Administration concentration and consent of the instructor. Students work 15-20 hours per week as supervised interns in a public agency. Supervision is provided by the faculty and cooperating agency. In addition to the job experience, interns meet in a weekly three-hour seminar.

431 Government and Politics of Democratic Systems (3) F, S

Prerequisite: Political Science 231. A comparative analysis of the structures and functions of the political systems of democratic states; for example, United Kingdom, Italy, Sweden, and Japan.

433 Government and Politics of Authoritarian Systems (3) F, S

Prerequisite: Political Science 231. A comparative analysis of the structures and functions of the political systems of communist and fascist states.

435 Government and Politics of Developing Systems—Africa (3) F

Prerequisite: Political Science 231. A comparative analysis of the structures and functions of the political systems of developing societies in Africa.

436 Government and Politics of Developing Systems—South and Southeast Asia (3) S

Prerequisite: Political Science 231. A comparative analysis of the structures and functions of the political systems of developing societies in South and Southeast Asia.

437 Government and Politics of Developing Systems—Latin America (3) F

Prerequisite: Political Science 231. A comparative analysis of the structures and functions of the political systems of developing societies in Latin America.

438 Latin American Interest Groups (3) S

Prerequisite: Political Science 231. Consideration of the role of church, military, business, peasant and bureaucratic groups in Latin American society with particular interest in their impact on the quest for governmental stability and economic development.

440 Political Ideologies and Attitudes (3) S

Prerequisite: Political Science 341. The content and appeals of contemporary ideologies. The social, economic and psychological bases of political attitudes and preferences.

Political Science

442 Problems of Democratic Political Thought (3) F

Prerequisite: Political Science 341. Problems relevant to philosophies and theories of democratic political systems, with emphasis on American political thought.

443 The Theory and Philosophy of Marxism (3) S

Prerequisites: Political Science 341 and 342. An analytical study of Marxist theory and philosophy from its pre-Hegelian roots to the present.

450 Current Problems in American Foreign Policy (3) S

An examination of the impact of the United Nations, alliances, propaganda, military strategy and economics on U.S. foreign policy. Particular emphasis will be given such problems as Viet Nam, the Caribbean, the Sino-Soviet split, and the aspirations of developing nations.

451 Problems in International Relations (3) F, S

Prerequisite: Political Science 251. Examination of selected problems in various countries and geographic areas with a definite impact on International Relations, such as nationalism, colonialism, anticolonialism, neutralism, racism, ethnic and linguistic minorities, border disputes, governmental instability, economic poverty, disease, illiteracy and overpopulation.

452 Conduct of American Foreign Relations (3) F, S

Formulation and execution of foreign policy. The roles and powers of the President, Senate, and House of Representatives. The functions of the Department of State and Foreign Service, United States Information Agency, Agency for International Development (AID); the role of the Pentagon; public opinion and pressure groups. Separation of powers, checks and balances, and cooperation in the conduct of American foreign policy.

453 Contemporary Approaches to International Relations (3) F

Prerequisite: Political Science 251. Consideration of theories applicable to the study of the actions and interactions of states; systems analysis, models, decision-making, communications, the concept of power; examination of such research tools as gaming, simulation, content analysis.

454 The Soviet Union in World Affairs (3) S

Prerequisite: Political Science 251, 433. Theory and practice of Soviet Russia's foreign policies; the international relations theories of Marx, Lenin, Stalin, and Khrushchev; practices of the Kremlin; world strategy and tactics of the Soviet Communist movement.

460 International Law (3) S

Prerequisite: Political Science 251. The sources and nature of international law; its role in a world of sovereign states; the law of war and peace; the rights and duties of nations in their international relationships. The World Court; purpose, problems, and prospects.

461 The United Nations and Other Public International Organizations (3) F

Prerequisite: Political Science 251. The nature, scope, and role of public international organizations; evaluation of the League of Nations; analysis of the United Nations; its functions, purposes and problems; role of the World Court; International Labor Organization. Functions of UNESCO, UNICEF, and similar organizations.

463 The International Relations and Problems of Latin America (3) S

Prerequisite: Political Science 251. A study of the foreign policies of the individual Latin American states, problems presented by the cold war and U.S. policies, the O.A.S., current efforts for economic cooperation, and Latin America's role in the U.N.

471 The Judicial Process (3) S (Formerly 371)

Prerequisite: Political Science 373 or 374. The nature and functions of law in the Anglo-American legal system, the federal and state courts, legal procedures and their relationship to the American political process. Approaches to the study of the judicial process.

499 Independent Study (1-3) F, S

Open to advanced students in political science by permission of the department chairman. May be repeated for credit.

(The prerequisite for each graduate course is consent of the instructor.)

506 Seminar in the Scope and Theory of Political Science (3) S

The nature of the discipline, approaches, tools, concepts and theories.

511 Advanced Studies in American Politics (3) F

A comprehensive examination of the political process in the United States.

521 Seminar in Administrative Theory (3) F

An intensive study and analysis of the historical and theoretical foundations of public administration.

526 Seminar in Administrative Behavior (3) S

Concepts, functions and techniques of administrative leadership; group dynamics; decision-making; the organization and the individual.

531 Seminar in Comparative Politics (3) S

A comparative study of selected aspects of political systems.

541 Advanced Studies in Political Theory (3) F

A comprehensive examination of ideologies, concepts, methods and trends in political theory.

551 Advanced International Relations (3) F, S

Study of selected problems in international relations with emphasis on individual research and contributions within the framework of a seminar. May be repeated for credit.

571 Advanced Studies in Public Law (3) S

Selected studies of the relationship of the judicial process to legislative decision making; executive power; local government; the initiation process; and public opinion.

598 Thesis (3-6) F, S (Formerly 591)

Prerequisite: consent of the instructor.

599 Independent Graduate Research (1-3) F, S

Open only by permission of the chairman of the department. May be repeated for credit.

Portuguese

PORTUGUESE

(Offered by the Department of Foreign Languages and Literatures)

101 Fundamental Portuguese (4) F

Listening comprehension, speaking, reading comprehension, and writing to develop control of the sounds and the basic forms and structures of Portuguese. Enrollment restricted to students with previous study of a Romance language.

102 Fundamental Portuguese (4) F

Prerequisite: Portuguese 101 or equivalent. Listening comprehension, speaking, reading comprehension, and writing to develop control of the sounds and the basic forms and structures of Portuguese. Enrollment restricted to students with previous study of a Romance language.

315 Introduction to Brazilian Culture and Civilization (3) F

Prerequisite: Portuguese 102 or equivalent, reading knowledge of Portuguese or consent of instructor. Readings and discussions to develop insights into the literature of Brazil and intellectual expression of the leading ideas in Brazilian civilization, while at the same time strengthening facility with the language. Conducted in Portuguese.

499 Independent Study (1-3) F, S

Supervised projects in Portuguese language or literature to be taken with the consent of the instructor and the department chairman. May be repeated for credit.

PSYCHOLOGY

101 Introductory Psychology (3) F, S

General introduction to basic concepts and problems in psychology as a behavioral discipline. Emphasis upon the human organism as an adapting system, with attention to genetic origins; normal development and capacities; problem-solving and adjustment to stress.

161 Elementary Statistics (3) F, S

An introductory course in descriptive statistics with an introduction to inferential methods.

202 Principles of Psychology (3) F, S

Prerequisite: Psych 101. A course for psychology majors covering selected basic areas of psychology in depth. Special emphasis on the methods of studying physiological factors, adaptive behavior, perception, cognition and motivation. (2 hours lecture and 3 hours laboratory)

231 Psychology of Personal Adjustment (3) S

Prerequisite: Psych 101. Dynamics of personal adjustment and interpersonal relations. Nature of conflict and frustration; demands of changing social roles; and attitudes, opinions and prejudices as they affect the individual and his relationships to others.

Note: All Upper Division courses require a minimum of six lower division units in psychology.

302 Experimental Psychology: Learning and Motivation (3) F, S

Prerequisites: Psych 101, 202, 161 or permission of instructor. Selected experimental investigations in human and animal learning, memory, thinking, problem solving, and motivation with appropriate lecture and discussion. (2 hours lecture and 3 hours laboratory)

303 Experimental Psychology: Sensation and Perception (3) S

Prerequisites: Psych 101; 202; 161 or permission of instructor. Selected experimental investigation with appropriate lecture and discussion. (2 hours lecture and 3 hours laboratory)

304 Experimental Psychology: Comparative (3) F, S

Prerequisites: Psych 101; 202; 161 or permission of instructor.

Behavioral similarities and differences between species as related to their position on the phylogenetic scale; the relation of changes in activity, motivation, emotionality, complexity, plasticity and adaptiveness of behavior to changes in sensory, motor, endocrine and neural structures as well as genetic and environmental factors. (2 hours lecture and 3 hours laboratory)

311 Educational Psychology (3) F, S

Application of psychological research and theory to the educative process. Major attention given to the problems of learning, individual differences, child capacities, and behavior. (Not open to students who have taken Educ 311.)

321 Physiological Psychology (3) F, S

Survey of relations between behavior and biological processes. Anatomy and physiology of the nervous system, role of neural and humoral agents in perception and complex behavior (emotion, etc.), behavioral effects of brain lesions, the effects of drugs on behavior, psychosomatic disorders and motivation.

331 Psychology of Personality (3) F

Concepts of personality development, structure, and dynamics, with emphasis upon problems, methods, and findings in the study of personality.

341 Abnormal Psychology (3) F, S

Dynamics, symptoms, causes, treatment, and prevention of neuroses, psychoses, alcohol and drug addiction, psychosomatic illnesses, and character disorders.

342 Mental Health (3) S

Social and emotional dynamics of the adjustment processes, including an analysis of the concepts of mental health. Emphasis upon positive factors in the individual, group, and community conducive to improving mental health. (Credit not given as part of psychology major.)

351 Social Psychology (3) F, S

Study of phenomena of social interaction and the nature of group processes and influences. Attention paid to the intrapsychic effects of group influences on the individual's behavior.

361 Developmental Psychology (3) F

Prerequisite: Psych. 101. Concepts and processes involved in the understanding of the psychological development of the person from infancy through adulthood. Attention is given to stages in the development of cognition, emotion, perception, motivation, and to the interaction of these processes.

391 Industrial Psychology (3) F

Study of psychological principles and techniques in industrial and business settings. Includes selection, placement, training, human factors, environmental influences, problems of people at work, and consumer behavior.

408 History of Psychology (3) F, S

Prerequisites: 12 upper division units in psychology or permission of instructor. Survey of the development of psychology from early times to the present.

Psychology

412 Psychology of Learning (3) S

Prerequisite: Psych 302 or permission of instructor. Principles of learning according to the major theoretical systems. Critical evaluation of the theories and systems.

413 Perception (3) S

Prerequisite: Psych 303 or permission of instructor. Psychological problems in perception.

415 Cognitive Processes (3) S

Prerequisite: Psych 302, Psych 303 or Psych 304. Consideration of theory and research with respect to problem solving, thinking, concept learning, language, decision making and judgment, cognitive structure, cognitive development.

431 Theories of Personality (3) S

Prerequisite: Psych 331 or permission of instructor. Personality structure, development, and dynamics according to major theories. Research methods as they apply to personality theory.

451 Experimental Social Psychology (3) S

Prerequisites: Psych 161 or equivalent; Psych 202; and Psych 351. Study in depth of selected phenomena of social interaction and the nature of group processes and influences. Laboratory experience in experimental investigation of attitude formation and change; group processes such as communication, and problem-solving and formation of norms; interpersonal processes of influence and perception.

461 Group Psychological Testing (3) F, S

Prerequisite: Psych 161 or equivalent. Intelligence, aptitude, interest, and personality testing. Theory, construction, evaluation, interpretation, and uses of psychological tests.

465 Advanced Psychological Statistics (3) S

Prerequisite: Psych 161 or permission of instructor. Quantitative methods in psychology with particular emphasis on correlation, small sample theory, nonparametrics and some complex analysis of variance procedures.

471 Behavior Modification (3) F

Prerequisite: Psych 302 and senior standing. An exposition and evaluation of the theory, research, and techniques for modifying human behavior. Emphasis on operant conditioning as applied to retarded and psychotic behavior.

481 Survey of Clinical Psychology (3) F

Prerequisites: Psych 331, 341, and 461. Development and contemporary aspects of the field. Methods, diagnosis, therapeutic techniques, research, and problems.

499 Independent Study (1-3) F, S

Prerequisites: Senior standing and permission of instructor. Individual library study or experimental investigation under direction of a staff member. May be repeated for credit.

500 Advanced General Psychology (3) F, S

An integration of key concepts in learning, motivation, perception, personality and social psychology.

510 Experimental Design (3) F, S

Prerequisites: Psych 161 and 465. Principles and methods of planning and carrying out systematic investigations on the behavior of complex organisms, interde-

pendence of experimental design and statistical evaluation of results, and the opportunity for practice in formulation of testable hypotheses.

511 Seminar in Psychological Measurement (3) S

Logic and methodology of measurement in the areas of intelligence, personality, judgment, and attitudes: problems of test construction and validation. May be repeated for credit.

520 Seminar: Experimental Psychology (3) F

Prerequisites: graduate standing; Psych 465 and Psych 500. Study in depth of the data, methods, problems and current developments in sensation-perception; animal learning; human motor and verbal learning; thinking and problem solving; and motivation. May be repeated for credit.

521 Seminar: Personality and Social Psychology (3) S

Prerequisites: graduate standing; Psych 500. An intensive study of central problems in personality and social psychology. Intensive study current problems and theories in these areas. May be repeated for credit.

531 Individual Mental Testing (3) F

Prerequisite: Psych 461. Study of the major tests of intelligence. Emphasis upon practical experience in administration, scoring, and interpretation of these instruments.

598 Thesis (3-6) F, S (Formerly 591)

Prerequisites: formal admission to candidacy; permission of instructor. The writing of a thesis based on a major study or experiment in psychology.

599 Independent Graduate Research (1-3) F, S

Prerequisites: graduate standing and permission of instructor. Individual library study or experimental investigation under direction of a staff member. May be repeated for credit.

RUSSIAN

(Offered by the Department of Foreign Languages and Literatures)

101 Fundamental Russian (5) F, S

Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structure of Russian. Audio-lingual assignments are an integral part of the course and are to be prepared in the language laboratory.

102 Fundamental Russian (5) F, S

Prerequisite: Russian 101 (or equivalent). Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structures of Russian. Audiolingual assignments are an integral part of the course and are to be prepared in the language laboratory.

203 Intermediate Russian (3) F

Prerequisite: Russian 102 (or equivalent). Intensive practice in speaking, understanding, reading, and writing based on cultural and literary materials. Linguistic analysis from sound to sentence.

204 Intermediate Russian (3) S

Prerequisite: Russian 203 (or equivalent). Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence.

Science Education

315 Introduction to Russian Civilization (3) F

Prerequisite: Russian 204 or equivalent. Reading and discussion to develop a view of the Russian tradition (its social, intellectual and literary evolution) while at the same time strengthening facility with the language. Open to lower division students with consent of instructor. Conducted in Russian.

317 Advanced Conversation and Composition (3) F

Prerequisite: Russian 204 (or equivalent). Open to lower division students with the consent of the instructor. Designed to give the student special competence in the control of Russian as an instrument for free oral and written expression. Conducted in Russian.

400 Russian for Advanced Students and Teachers (3) S

Prerequisite: Russian 317 or consent of instructor. Intensive review of spoken Russian, while developing the student's powers of self-expression in the spoken and written language. Modern writings in various fields, as well as developments in methodology and texts, serve as the basis for intensive practice. Conducted in Russian.

441 The Works of Tolstoy and Dostoyevsky (3) F

Prerequisite: Russian 315 or equivalent, or consent of instructor. Major works of Tolstoy and Dostoyevsky in their intellectual and historical setting and their impact on Russian and world literature. Conducted in Russian.

451 The Golden Age of Russian Literature (3) S

Prerequisite: Consent of instructor. A study of major literary works of the first half of the 19th century which exemplify cultural and intellectual movements in Russia. Conducted in Russian.

499 Independent Study (1-3) F, S

Supervised projects in Russian language or literature to be taken with the consent of the instructor and department chairman. May be repeated for credit.

SCIENCE EDUCATION

(Offered by the Department of Science and Mathematics Education)

310 Elementary Experimental Science (3) F, S

Prerequisite: Completion of general education natural science requirements or consent of instructor. A laboratory centered course in the physical sciences appropriate for prospective elementary schoolteachers and other youth workers. The course covers, by both lectures and laboratory investigations, selected content areas from the fields of chemistry, physics, geology, oceanography, astronomy, and meteorology that are commonly found in elementary school science programs. Heavy emphasis is placed on laboratory and field investigations of a kind adaptable for children. This course may not be used to fulfill General Education requirements nor is it appropriate for science majors. (2 hours lecture, 2 hours activity)

434 Elementary School Science—New Curricula (3) F (Offered alternate years)

Prerequisites: Sci Educ 310 (or equivalent) or consent of instructor. The content, philosophy and techniques of the new curricula for elementary science courses are studied. At present the course is designed to prepare teachers for the AAAS process approach to elementary science. (2 hours lecture, 2 hours activity)

442 Teaching Science in the Secondary School (2) F, S

Prerequisites: Education 340, Education 311, admission to teacher education, senior standing or consent of the instructor. The student who has not had teaching experience must register concurrently in Education 449. See pages under Secondary

Education for description of Standard Teaching Credential program. Objectives, methods, and materials including audiovisual instruction for teaching science will be studied. Developing and using lesson plans, discussions, laboratory activities, etc., will be experienced during the course. (1 hour lecture, 2 hours activity)

443 Secondary Science Education—Biology (3) F

Prerequisites: Sci Educ 442 (or equivalent) or consent of the instructor. Educational practices particular to the teaching of biology are studied. Special emphasis is placed on recent curricular developments in this area. Presently the course is designed to instruct teachers in the theory, content and methodology developed by the Biological Sciences Curriculum Study (BSCS). (2 hours lecture, 2 hours activity)

444 Secondary Science Education—Chemistry (3) S

Prerequisites: Sci Educ 442 (or equivalent) or consent of the instructor. Similar to Sci Educ 443 with the emphasis on chemistry. Presently the course is oriented around the programs developed by the Chemical Educational Materials Study (CHEMS) and the Chemical Bond Approach (CBA) to teaching chemistry. Needs of participating teachers will determine which program will be emphasized. (2 hours lecture, 2 hours activity)

445 Secondary Science Education—Physics (3) F

Prerequisites: Sci Educ 442 (or equivalent) or consent of the instructor. Similar to Sci Educ 443 with the emphasis on physics. Presently the course is oriented around the Physical Science Study Committee program (PSSC) and the Harvard Project Physics (HPP) physics courses. Needs of the participants will determine which program will be emphasized. (2 hours lecture, 2 hours activity)

446 Secondary Science Education—Earth Science (3) F, S

Prerequisites: Sci Educ 442 (or equivalent) or consent of the instructor. The content, philosophy, and techniques of teaching earth science on the secondary level are studied. This course is designed to prepare teachers in the theory, content and methodology in the earth science course developed by the Earth Science Curriculum Project (ESCP). (2 hours lecture, 2 hours activity)

499 Independent Study (1-3) F, S

Study of some special topic in science education, selected in consultation with the instructor and carried out under his supervision. May be repeated for credit.

710 Seminar in Science Education (2) S

Prerequisites: an A.B. degree, teaching credential, or consent of instructor. Designed for postgraduate science students who wish to investigate recent developments in teaching the sciences. New courses and materials for the various subject matter fields will be researched and demonstrated. Areas of concentration will depend on interests and training of the seminar participants. May be repeated for credit.

749 Student Teaching in Science in the Secondary School and Seminar (6) F, S

See page 144 under Secondary Education for description and prerequisites.

770 Advanced Topics Institute-Biology (3) F, S

Prerequisites: BA degree, experience with BSCS biology materials, at least two years teaching experience, presently teaching biology, consent of the instructor. This is an NSF supported institute. The themes and levels of biology identified by the BSCS are explored, in depth, by a team of college-university professors. Laboratory explorations are included.

Social Welfare

SOCIAL WELFARE

(Offered by the Department of Sociology)

311 Welfare Institutions (3) F

Prerequisite: consent of the instructor. An introduction to the field, taught by an experienced social worker. Consideration of the philosophy, structure, functioning, and coordination of welfare agencies. Designed for students interested in social work and such related professions as teaching, counseling, public administration, law, medicine, and religious vocations.

351A Social Work Methods (3) F

Prerequisite: Social Welfare 311, Psychology 331 or Sociology 341 or consent of the instructor. An introduction to case work, group work, and community organization, using case work materials, group work experiences, workshops in community activities and interviewing techniques. Designed for candidates for graduate study and for preprofessional employment in agencies.

351B Social Work Methods (3) S

Prerequisite: Social Welfare 351A. An extension of 351A with more intensive emphasis on practical experiences in case work, group work, and community organization, to enable the student to formulate a basic frame of reference for relating to troubled people seeking help.

SOCIOLOGY

201 Introduction to Sociology (3) F, S

A general introduction to the basic concepts of sociology, and the scientific study of human society. Among topics included are social interaction, culture, personality, social processes, population, social class, the community, social institutions, and sociocultural change.

202 Social Problems (3) F, S

Prerequisite: Sociology 201. Study of the extent, causes and consequences of a number of social problems, with emphasis on twentieth-century America. Problems are viewed in the context of the changing society.

271 Education for Marriage (3) S

A sociopsychological study of marital adjustment. Dating and mate selection; factors associated with successful marriages; principal areas of adjustment; parent-child relationships; causes and results of divorce.

331A Social Research Methods (3) F, S

Prerequisite: Sociology 201 or consent of the department. Research design and methods of gathering data, especially by interview and questionnaire, are emphasized. Among other topics are the role of theory in research, and sampling methods and problems. (2 hours lecture, 2 hours activity)

331B Social Research Methods (3) F, S

Prerequisites: Sociology 201, 331A, or consent of the department. Elementary statistical analysis of social data is emphasized, with some consideration of problems of measurement and of the writing of research reports. (2 hours lecture, 2 hours activity)

341 Social Interaction (3) F, S

Prerequisites: Sociology 201 and 3 units of psychology. Inquiry into the social and sociopsychological dimensions of group behavior and the socialization of the individual. Social interaction and its impact on the individual and personality formation.

348 Collective Behavior (3) S

Prerequisite: Sociology 201. Characteristics of crowds, mobs, publics. Analysis of social movements and revolutions, their relation to social unrest and their role in developing and changing social organization.

361 Population Problems (3) F

Prerequisite: Sociology 201. Population composition, growth and movement. Social factors affecting birth rates, death rates, and migration. Attention is given to the population of the United States and to selected areas of the world.

371 Urban Sociology (3) S

Prerequisite: Sociology 201. The population and ecology, patterns of growth, institutions, characteristic social interaction, values, and problems of the urban community.

411 Criminology (3) S

Prerequisite: Sociology 201. The extent, causes and control of criminal behavior. Includes study of the criminal law, causal factors and theories, correctional institutions, probation and parole, and preventive efforts.

413 Juvenile Delinquency (3) F

Prerequisite: Sociology 201. Juvenile delinquency as a social problem. Sociological study of the causes of delinquent behavior, and programs of control, treatment and prevention.

425 Comparative Social Change (3) S

Prerequisite: Sociology 201. Comparative analysis of changing community, institutional, technological, and social class patterns in selected societies, with emphasis on differences between "developed" and developing areas.

431 Minority Group Relations (3) F, S

Prerequisite: Sociology 201. Study of racial, national and religious minorities, especially in the United States. Includes study of discrimination, prejudice, different patterns of intergroup adjustment, and attempts to change group status.

436 Social Stratification (3) S

Prerequisite: Sociology 201. Social class structures and their functions. Different styles of life; determinants of class status; vertical social mobility; change in class systems.

451 Sociology of the Family (3) F, S

Prerequisite: Sociology 201. The family as a social institution. Historical and cross-cultural perspectives; social change affecting marriage and the family; analysis of American courtship and marriage patterns; the psychodynamics of family life.

458 Sociology of Religion (3) S

Prerequisite: Sociology 201. Theoretical analysis of religion as a social institution in complex societies. The structure and functioning of religious organizations; roles and role relationships; types of religious organizations and leadership; the relationships of religion to other social institutions; religion and social change.

Sociology

460 Comparative Institutions: Latin America (3) F

Prerequisites: Sociology 201. Comparative study of Latin American institutions (familial, economic, religious, political, military). Analytic emphasis on institutional structures and processes; relationship of institutions to each other and the larger society.

465 Law and Society (3) F

Prerequisite: Sociology 201. The law and lawyers in the context of human society. Law as formal social control, variations in legal systems, social change and selected areas of law, the legal profession.

470 Sociology of Occupations (3) F

Prerequisite: Sociology 201. Sociological analysis of work roles in technologically advanced societies. Career patterns, occupational recruitment, job mobility, organizational demands. The nature and development of the professions, their ideologies and images.

473 Complex Organizations (3) S

Prerequisite: Sociology 201. Sociological analysis of formal organizations (industrial, governmental, welfare, military, medical, educational, correctional, etc.) as systems of social interaction. Includes such topics as blueprinted vs. informal structure, authority, decision-making, role conflicts, communication and morale.

477 Social Organization (3) F

Prerequisites: Sociology 201; six upper division sociology units, or consent. Theories of social organization and the structure of various social groups are analyzed, with a comparative analysis of social structures and systems. The various levels of groups are discussed and interrelated.

480 Development of Social Thought (3) F

Prerequisite: Sociology 201. Social thought and civilization since early times; comparative study of the orientations of earlier writers towards the nature of man and society.

481 Sociological Theory (3) F, S

Prerequisite: Sociology 201 and consent of the department. A comprehensive survey of the main schools of sociological thought, both European and American, with emphasis on *systems* of theory, methodology of theorists, cultural change, and social institutions.

499 Independent Study (1-3) F, S

Prerequisites: At least 12 hours of sociology and consent of the adviser. Student selects an individual research project, either library or field. There are conferences with the adviser as necessary, and the work culminates in one or more papers. May be repeated for credit.

511 Seminar in Crime and Delinquency (3) S

Prerequisites: either Sociology 411 or 413, or consent of the department. Analysis of selected problems in the field of crime and delinquency with major emphasis upon independent investigation into the theoretical and research contributions on the causes, prevention and treatment of criminal and delinquent behavior.

531 Methods and Measurements in Sociology (3) S

Prerequisites: Sociology 331A, 331B, or their equivalents, or consent of the department. A critical analysis of basic problems of social research. Casual inferences, value bias, and measurement, especially the construction of scales.

533 Seminar in Intergroup Relations (3) S

Prerequisite: Sociology 431 or consent of the department. Analysis of relations among ethnic, racial and religious groups throughout the world. Analysis of processes leading to, sustaining, and associated with changes in relations among such groups.

536 Seminar in Social Stratification (3) F

Prerequisite: Sociology 436 or consent of the department. Analysis of stratification in industrial societies. Emphasis on theory and methods, and on international comparisons. Analysis of factors leading to social class, the persistence of class divisions, class conflict and social change, and the effects of class on behavior.

541 Seminar in Social Interaction (3) S

Prerequisites: Sociology 341 or consent of the department. Advanced social-psychological study of social interaction, including sociological factors in personality development and analysis of primary group behavior.

573 Seminar in Large Organizations (3) F

Prerequisite: Sociology 473 or consent of the department. The analysis of large organizations, their structural and operating characteristics and the relationships between the organization and its members.

577 Seminar in Social Organization (3) S

Prerequisites: Sociology 477 or its equivalent and consent of the department. A critical treatment of various theoretical approaches to the analysis of social organization. Specific areas of social organization.

581 Analysis of Sociological Theory (3) F

Prerequisites: Sociology 481 or equivalent and consent of the department. Examination of the basic elements and key problems in constructing a systematic sociological theory. A detailed, comprehensive and critical analysis of selected theoretical works.

598 Thesis (3) F, S (Formerly 591)

Prerequisites: acceptance as a candidate for the M.A. in sociology, and approval of the topic. Individual research under supervision, reported in a thesis, and defended in an oral examination conducted by a faculty committee. Must be taken 2 semesters for a total of six units.

599 Independent Graduate Research (1-3) F, S

Prerequisite: consent of the graduate adviser, and the department. Individual research on either a library or empirical project, with conferences with the adviser as necessary, culminating in one or more papers. May be repeated for credit.

SPANISH

(Offered by the Department of Foreign Languages and Literatures)

101 Fundamental Spanish (5) F, S

Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structure of Spanish. Audio-lingual assignments are an integral part of the course and are to be prepared in the language laboratory.

102 Fundamental Spanish (5) F, S

Prerequisite: Spanish 101 (or equivalent). Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the

Spanish

basic forms and structure of Spanish. Audiolingual assignments are an integral part of the course and are to be prepared in the language laboratory.

203 Intermediate Spanish (3) F, S

Prerequisite: Spanish 102 (or equivalent). Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence.

204 Intermediate Spanish (3) F, S

Prerequisite: Spanish 203 (or equivalent). Intensive practice in speaking, understanding, reading, and writing based on cultural and literary materials. Linguistic analysis from sound to sentence.

213 Intermediate Composition (2) F, S

Practice in written expression based on cultural and literary materials. May be taken concurrently with Spanish 203. Required of all majors and minors at the intermediate level; optional to others.

214 Intermediate Composition (2) F, S

Practice in written expression based on cultural and literary materials. May be taken concurrently with Spanish 204. Required of all majors and minors at the intermediate level; optional to others.

315 Introduction to Spanish Civilization (3) F

Prerequisite: Spanish 204 or equivalent. Readings and discussions in Spanish literature, arts and institutions to develop insights into Spanish culture, while strengthening facility with the language. Open to lower division students with the consent of the instructor. Conducted in Spanish.

316 Introduction to Spanish-American Civilization (3) S

Prerequisite: Spanish 204 or equivalent. Reading and discussion in Spanish-American literature, arts and institutions to develop insights into Spanish-American literature and culture while strengthening facility with the language. Open to lower division students with the consent of the instructor. Conducted in Spanish.

317 Advanced Conversation and Composition (3) F

Prerequisite: Spanish 204 or equivalent. Open to lower division students with the consent of the instructor. Designed to give the student special competence in the control of Spanish as an instrument for free oral and written expression. Conducted in Spanish.

400 Spanish for Advanced Students and Teachers (3) S

Prerequisite: Spanish 317 or consent of instructor. Intensive review of spoken Spanish, while developing the student's powers of self-expression in the spoken and written language. Modern writings in various fields, as well as developments in methodology and texts, serve as the basis for intensive practice. Conducted in Spanish.

431 The Golden Age (3) S

Prerequisite: Spanish 315 or consent of instructor. Major works including Mysticism, the Picaresque and Pastoral Novels, the theater of Lope de Vega and his contemporaries. Conducted in Spanish.

441 Spanish-American Literature (3) F

Prerequisite: Spanish 316 or consent of instructor. The chronicle, short story, prose and poetry from colonial times to the present. Conducted in Spanish.

451 Spanish Literature to the Golden Age (3) F

Prerequisite: Spanish 315 or consent of instructor. *Cantar de Mio Cid* and other epic poetry, the early ballads and lyric literature, the prose of Juan Manuel, the Renaissance lyrics of Garcilaso de la Vega, *El libro de buen amor* and *La Celestina*. Conducted in Spanish.

461 Spanish Literature Since Neoclassicism (3) S

Representative works of the 19th and 20th centuries. Analysis of romanticism, eclecticism, naturalism, realism, and *Tremendismo*. Conducted in Spanish.

466 Introduction to Spanish Linguistics (3) F

The analytical procedures of general linguistics as applied to Spanish, with special attention to structural contrasts between Spanish and English. Emphasis on the application of linguistic analysis to the teaching of modern foreign languages.

472 Senior Seminar: Cervantes and the Age of Humanism (3) S

Prerequisite: Spanish 431 or consent of instructor. Cervantes' artistic creation and its relation to the culture of the 16th century. Special emphasis on *Don Quixote* and the *Novelas ejemplares*.

475 Senior Seminar: Contemporary Literature of Spain (3) F

The Generation of '98 and 20th-century theater, poetry and novel. Conducted in Spanish.

499 Independent Study (1-3) F, S

Supervised research projects in Spanish language or literature to be taken with the consent of the instructor and department chairman. May be repeated for credit.

500 Graduate Seminar: Advanced Structure and Style (3) S

Prerequisite: consent of instructor. Conducted in Spanish.

510 Graduate Seminar: Phonology (3) F

Prerequisite: Spanish 466 or consent of instructor. Conducted in Spanish.

530 Graduate Seminar: Historical Linguistics (3) S

Prerequisite: Spanish 466 or consent of instructor.

556 Graduate Seminar: Spanish Poetry (3) F

Prerequisite: consent of instructor. Conducted in Spanish.

557 Graduate Seminar: Spanish-American Poetry (3) S

Prerequisite: consent of instructor. Conducted in Spanish.

567 Graduate Seminar: Spanish-American Novel (3) F

Prerequisite: consent of instructor. Conducted in Spanish.

571 Graduate Seminar: Spanish Prose (3) S

Prerequisite: consent of instructor. Conducted in Spanish.

575 Graduate Seminar: Spanish Drama (3) F

Prerequisite: consent of instructor. Conducted in Spanish.

576 Graduate Seminar: Major Writers (3) S

Prerequisite: consent of instructor. Conducted in Spanish. May be repeated for credit.

598 Thesis (3-6) F, S (Formerly 580)

Prerequisite: recommendation of student's graduate committee.

SPEECH**101 Fundamentals of Speech (3) F, S**

Provides the student with a basic understanding of the principles of rhetoric and oral communication, including listening, as well as with experiences in such activities as discussion, oral reading, and public speaking.

138 Forensics (2) F, S

Prerequisite: Speech 101. Investigation and practice in the background, format, procedures, and evaluation criteria of the various forensic events. Students must participate in at least two intercollegiate tournaments. May be repeated for credit. (1 hour lecture, 3 hours laboratory)

202 Voice and Diction (3) F, S

Prerequisite: Speech 101. The study of principles and practice of correct sound formation, voice production, and manner of speaking (2 hours lecture, 2 hours laboratory)

211 Introduction to Oral Interpretation (3) F, S

(Same as Drama 211.)

231 Essentials of Public Speaking (3) F, S

Prerequisites: Speech 101, a high school course in speech, or consent of instructor. The composition and delivery of talks to inform and to persuade. Logical organization and substantive development are stressed.

235 Essentials of Argumentation and Debate (3) F, S

Prerequisite: Speech 101 or 231. Investigation of the forms and skills of debate in our society. Use of evidence and case construction are emphasized. Parliamentary, symposium, and academic debate are considered.

301 Speech for Teachers (3) F, S

Prerequisite: Speech 101 or graduate standing. This course is designed to help teachers to use speech and dramatized activities effectively in the classroom. The normal speech development of children is examined, and consideration is given to the identification and handling of speech, hearing, and listening problems.

311 Oral Interpretation (3) F, S

(Same as Drama 311.)

324 Dynamics of Small Group Discussion (3) F

Prerequisite: Speech 101. Study and practice of the principles of group dynamics, interpersonal communication, and the process by which individuals work effectively in the solution of problems, share ideas, and become sensitive to the environment in which they work with others.

333 Business and Professional Speaking (3) F, S

Prerequisite: Speech 231 or graduate standing. Particular attention is given to the interview, speeches for special occasions, information giving, and business conferences. Not open to speech majors for major credit.

334 Advanced Public Speaking (3) F, S

Prerequisite: 231 or equivalent. Investigation of the problems and techniques of a series of speeches directed toward a predetermined goal: emphasis on progressive use of persuasive materials.

335 Advanced Argumentation (3) F

Prerequisite: 235. Argument as applied to advocacy; special attention is given to logic and evidence as related to analysis of significant issues.

338 Intercollegiate Forensics (2) F, S

Directed activity in debate and other forensic events. Participation in intercollegiate competition is required for credit. May be repeated for credit. (1 hour lecture, 3 hours laboratory)

340 Speech Science (3) S (Formerly 351)

Prerequisite: Speech 101. Anatomy and physiology of the speech mechanism with emphasis on respiration, phonation, resonance, articulation, and hearing; the physical and acoustical aspects of the speech process.

341 Phonetics (3) F, S

Prerequisite: Speech 101 or graduate standing. The study of the history and theory of speech sounds including the morphological aspect of linguistics; the use of the International Phonetic Alphabet; the various factors influencing articulation and pronunciation. (Same as Drama 341.)

342 Survey of Problems in Communication (3) F, S

To acquaint the undergraduate student with the subject matter and vocational opportunities, and principles of speech pathology and audiology. Covered will be the role of school personnel, classes of speech and hearing disorders, incidence, speech development and barriers to the normal acquisition of speech. Observation, lecture, films and demonstrations will be extensively utilized.

402 Phonetic Analysis of Speech (3) S

Prerequisite: 341. Intermediate level course in phonetics which introduces student to narrow transcriptions, the electromechanical analysis of speech, and laboratory techniques in physiological phonetics. Special selected problems in the anatomy and physiology of speech as related to problems of physiological and acoustic analysis. (Same as Linguistics 402.)

403 Speech Development (3) F, S

Prerequisite: Speech 101 or graduate standing. Study of linguistic development and the psychological aspects of oral communication. Meets the language and speech development and disorders requirement for specialized preparation to serve as teachers of exceptional children.

404 General Semantics (3) F

Prerequisite: Speech 101 or graduate standing. An examination of the basic principles underlying the influence of language on human action and interaction.

424 Discussion and Group Leadership (3) F, S

Prerequisite: Speech 324 is recommended. The principles and practices of leadership of groups in discussion. Survey of classical and modern backgrounds and uses of discussion. The logic and ethics of problem-solving discussion. The use of discussion as a means of public presentation.

433 British Public Address (3) F

Prerequisite: six units of upper division speech. A rhetorical study of the times, issues, proofs, structure, and style of selected speeches on British political, social, and religious topics.

434 American Public Address (3) S

Prerequisite: six units of upper division speech. A rhetorical history of the United States from the colonial period to the present. The influence of selected speeches and speakers on the development of American culture.

Speech

436 Survey of Rhetoric (3) F

Prerequisite: six units of upper division speech. A survey of ancient, medieval and modern rhetoric.

441 Speech Pathology: Nonorganic Disorders (3) F

Prerequisites: Speech 101 or graduate standing; Speech 341 and Speech 342. Speech pathology with special emphasis on the identification of the most commonly experienced speech problems of a nonorganic nature, such as, articulation, stuttering, voice-delayed development, areas of mental retardation, and emotional problems of children; basic principles of therapy in the clinic and in the classroom; parent conferences and referrals.

443 Speech Pathology: Organic Disorders (3) S

Prerequisite: Speech 441 or equivalent. Etiologies, evaluation, and treatment of speech defects of an organic nature (cleft palate, cerebral palsy, aphasia, voice, hearing, dental abnormalities and laryngectomy).

444 Persuasion (3) S

Prerequisite: six units of upper division speech. The study and application of psychological principles used by writers and speakers to effect social control: audience analysis and the use of persuasive techniques to influence the thought and behavior; the function of ethos.

451 Diagnostic Methods in Speech and Hearing (3) F

Prerequisite: Speech 443 or concurrent registration in Speech 443 or consent of instructor. Provides the student with information about various diagnostic procedures that can be used by him and in consultation with members of related disciplines: psychologist, pediatrician, otologist, orthodontist, neurologist.

452 Therapeutic Procedures in Speech and Hearing (3) S

Prerequisite: Speech 443 or concurrent registration in Speech 443 or consent of instructor. Observation and supervised experience in recommended procedures and use of instructional aids with speech-handicapped children, including the preparation and utilization of speech correction and speech improvement materials. (2 hours lecture, 2 hours activity)

458 Clinical Practice (2) F, S

Prerequisite: Speech 451 or 452 or concurrent registration in one of the courses, and approved application for clinical practice. Practice in the correction of speech in children and adults under supervision. May be repeated for a total of 6 units. (1 hour lecture, 3 hours laboratory)

463 Audiology (3) F

Prerequisites: Speech 351, 441, or consent of instructor. The nature of auditory functioning, physical and psychological. A detailed consideration of the anatomy of the auditory mechanism, pathological changes and medical treatment. A survey of the rehabilitation facilities for the aurally handicapped; e.g. agencies, hearing aids, auditory training, speech reading, etc.

464 Audiometry (3) F (Formerly 461)

Prerequisites: Speech 351, 441, or consent of instructor. Equipment, principles, methods and procedures used in conducting school and industrial hearing conservation programs. Attention is given to techniques of audiometric testing and the use of audiograms. Care and use of audiometers, both air-conduction and bone-conduction. Partially fulfills the state requirements for public school audiometrist.

465 Speech Reading and Auditory Training (3) S (Formerly 462)

Prerequisite: Speech 341 or consent of instructor. Historical backgrounds of lip-reading, methods used in visual reading of speech, and the techniques commonly used in the teaching of speech reading to the aurally handicapped.

499 Independent Study (1-3) F, S

Open to advanced students in speech with the consent of the department chairman. May be repeated for credit.

500 Introduction to Graduate Study in Speech (3) F, S

Introduction to methodological problems in graduate study. Location of source materials, including library and original data; research and project design.

503 Communication Theory (3) S

Critical analysis of the background, theory, research, and applications of the process of communication.

511 Graduate Seminar in Interpretation (3) F, S

(Same as Drama 511.)

524 Seminar in Discussion (3) F

Analysis of significant literature, major trends, and theories of argumentation, discussion, and debate, and an intensive study of the relationship of these areas to each other.

535 Seminar in Argumentation (3) S

Prerequisites: Speech 335; Speech 436 and Speech 444 recommended. Issues in development of argumentation theory: an examination of periodical literature and prominent texts.

536 Seminar in Rhetorical Theory (3) S

Analysis of major rhetorical treatises, 400 B.C. to A.D. 1800.

543 Major Problems in Speech Pathology and Audiology (3) F

Selected problems in speech pathology and audiology approached through an investigation of the literature and clinical research.

557 A-H Seminar in Speech Problems (2) F, S

Prerequisite: Consent of instructor. May be repeated for a total of 16 units, but no individual seminar may be repeated for credit: A, cleft palate; B, stuttering; C, aphasia; D, cerebral palsy; E, aphasoid child; F, voice disorders; G, articulation problems; H, mentally retarded.

558 Advanced Clinical Practice (2) F, S

Prerequisite: 6 units of Speech 458 or equivalent. Advanced clinical practice with children and adults, having communication problems encountered in professional setting such as the college clinic, public schools, hospitals, crippled children clinics, etc. Students will work with clients with disorders of voice, deafness, aphasia, dysarthria, stuttering. May be repeated for credit.

563 Seminar in Audiology (3) S

Investigation into a particular area or areas of audiology with selected problems. Emphasis is upon research and contributions within the framework of the seminar.

597 Project (3) F, S (Formerly 591)

The conduct and reporting of an approved project.

Speech Education

598 Thesis (3) F, S (Formerly 591)

Prerequisite: Speech 500. The selection, investigation, and written presentation of a selected problem in the field of speech.

599 Independent Graduate Research (3) F, S

Prerequisites: graduate standing and consent of chairman. Open to graduate students with permission of chairman of department. May be repeated for credit.

SPEECH EDUCATION

442 Teaching Speech in the Secondary School (2) F

Prerequisites: Education 311, Education 340, Admission to Teacher Education, senior standing or consent of the instructor. The student who has not had teaching experience must register concurrently in Educ 449. See page 144 under Secondary Education for description of standard teaching credential program. Objectives, methods, and materials for teaching speech in secondary schools. Required, before student teaching, of students presenting majors in speech for the standard teaching credential.

459 Clinical Practice and Student Teaching in Speech Correction and Lip Reading (4) F, S

Prerequisites: Education Found 311 and 24 units in the area of speech and hearing handicapped children in the public schools. Experiences include working in small groups and in individual therapy sessions with speech and hearing handicapped children enrolled in regular school classes, participation in parent counseling conferences and conferences with school personnel including administrators, classroom teachers, and nurses. Planning of curriculum materials to integrate speech and hearing therapy with regular classroom instruction will be stressed. This meets the directed teaching requirements for the credential to teach speech and hearing handicapped in remedial classes.

749 Student Teaching in Speech in the Secondary School and Seminar (6) F, S

See page 144 under Secondary Education for description and prerequisites.

SCHOOL OF BUSINESS ADMINISTRATION AND ECONOMICS

ACCOUNTING

200 Elementary Accounting (5) (Offered in alternate years)

Duplicates Accounting 201A and 201B. Accounting concepts and techniques essential to the administration of a business enterprise; analyzing and recording financial transactions; preparation of financial statements; analysis and interpretation of financial statements; introduction to manufacturing accounts and reports.

201A,B Elementary Accounting (3,3) F, S (Formerly 101A,B)

Prerequisite: Accounting 201A must be taken before taking Accounting 201B. Accounting concepts and techniques essential to the administration of a business enterprise; analyzing and recording financial transactions; preparation of financial statements; analysis and interpretation of financial statements; introduction to manufacturing accounts and reports.

300 Accounting Fundamentals (3) F, S (Open only to graduate students)

The basic fundamentals of accounting as they apply to the accumulation, organization, and interpretation of financial and quantitative data relevant to the activities of the corporate business enterprise.

301A,B Intermediate Accounting (3,3) F, S

Prerequisite: Accounting 201B or 200. The quantification, recording, and presentation of balance sheet and income statement items with particular emphasis on the corporate type of organization; statement of application of funds; cash flow statement; basic concepts of accounting theory; interpretation of financial statements.

302 Cost Accounting (3) F, S

Prerequisite: Accounting 201B or 200. The development of accounting information for management of manufacturing enterprises; cost records; cost behavior and allocation; standard costs; and an introduction to cost control.

303 Governmental Accounting (3) F

Prerequisite: one course in accounting. A consideration of the accounts and reports of nonprofit institutions, municipalities, state and federal governments; organization, procedures, budgets.

304 Managerial Accounting (3) F, S

Prerequisite: Accounting 201B or 200. This course is intended for students whose area of concentration is not accounting. Analysis, interpretation, and application of accounting information for managerial decision making; budgets and budgetary control; special-purpose reports; differential cost analyses.

307 Distribution Costs (3) S

Prerequisites: Accounting 201B or 200, and Marketing 351. The development of quantitative measures for marketing activity; costs of distributing through different channels of distribution, advertising vs. personal selling, and movement activities; development of sales budgets, standard costs, and the analysis of actual performance in the light of budgets and standards. (Same as Marketing 307.)

Accounting

308 Federal Income Tax (3) F, S

Prerequisite: Accounting 201B or 200. Basic consideration of the history, theory, and accounting aspects of federal income taxation.

401 Advanced Accounting (3) F, S

Prerequisite: Accounting 301B. A study of partnerships, statements for special purposes, receiverships, consolidated financial statements, branch accounting and foreign exchange.

402 Auditing (3) F, S

Prerequisites: Accounting 301B and 302. Nature of an audit, auditing standards and procedures, audit reports; professional ethics and responsibilities of the independent public accountant; introduction to internal auditing.

406 Cost Control (3) S

Prerequisite: Accounting 302. A study of current and persistent problems in cost accounting; theories of cost allocation and absorption; flexible budgeting; responsibility accounting; and distribution cost control.

407 Integrated Data Processing Systems (3) F, S

Prerequisites: Accounting 201B or 300 and Quant Meth 264. Integrated systems for the collection, processing, and transmission of information; management aspects of the information service function; feasibility studies; case studies of operating systems.

408 Problems in Taxation (3) S

Prerequisite: Accounting 308. Research in problems of taxation with emphasis on income taxes as they relate to corporations, partnerships and fiduciaries.

409 C.P.A. Problems and Theory (3) S

Prerequisite: Accounting 401, or consent of the instructor. Selected problems and questions as found in the uniform C.P.A. examination; preparation, analysis and revision of financial statements; assets, liabilities and ownership equities; income determination; cost accounting; governmental and institutional accounting; accounting theory.

499 Independent Study (3) F, S

Prerequisites: senior standing and approval by the department chairman. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

500 Industrial Accounting (3) F, S

Prerequisites: Accounting 201B, or 200, or 300, graduate standing and consent of the instructor. Accounting information for industrial management; elements of manufacturing cost; cost systems; standard costs; cost reports; distribution cost analysis.

501 Seminar in Administrative Accounting (3) F, S

Prerequisites: Accounting 302, or 304, or 500, graduate standing and consent of the instructor. Accounting, financial, and other quantitative data for managerial decision-making; long-term and short-term profit planning; budgetary control; cost analysis and special reports; financial analysis and planning; the financial and taxation aspects of business decisions.

502 Seminar in Accounting Theory (3) F, S

Prerequisites: Accounting 301B, graduate standing and consent of the instructor. The concepts and theory of accounting; the effects of professional, governmental, business, and social forces on the evolution of accounting theory.

503 Seminar in Contemporary Financial Accounting Problems (3) S

Prerequisite: Accounting 502. A critical examination of the current problems and areas of controversy in financial accounting.

504 Seminar in Contemporary Managerial Accounting Problems (3) F

Prerequisites: Accounting 500 or Accounting 302, graduate standing and consent of the instructor. A critical examination of the current problems and areas of controversy in managerial accounting.

505 Seminar in Auditing (3) F

Prerequisites: Accounting 402 and graduate standing. Auditing theory and practices; professional ethics; auditing standards; SEC and stock exchange regulations; auditor's legal liability; statement trends and techniques.

597 Project (3) F, S

Open to qualified graduate students. Directed independent inquiry.

598 Thesis (3-6) F, S

Open to qualified graduate students. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

BUSINESS EDUCATION

(Offered by the School of Education)

442 Teaching Business in the Secondary School (2) F

Prerequisites: Educ 311, Education 340, Admission to Teacher Education, senior standing or consent of the instructor. The student who has not had teaching experience must register concurrently in Educ 449. See pages 144-146 under Secondary Education for description of Standard Teaching Credential program. Objectives, methods, and materials including audiovisual instruction for teaching business in secondary schools.

749 Student Teaching in Business in the Secondary School and Seminar (6) F, S

See page 144 under Secondary Education for description and prerequisites.

ECONOMICS**100 American Economic History (3) F, S**

The evolution of American economic institutions and their relation to the development of industry, commerce, transportation and finance.

200 Principles of Economics (5) F, S

Prerequisite: open only to junior transfers. (Duplicates 200A-B)

An introduction to the principles of economic analysis and policy including the central problem of scarcity, basic economic institutions of the United States, resource allocation and income distribution, economic stability and growth, and the role of public policy.

200A Principles of Economics (3) F, S

The first half of a two-semester sequence. An introduction to the principles of analysis and policy including the central problem of scarcity, basic economic insti-

Economics

tutions of the United States. Emphasizes resource allocation and income distribution, international economics, comparative economic systems, and the role of public policy.

200B Principles of Economics (3) F, S

Prerequisite: Economics 200A, or equivalent. The second half of a two-semester sequence. Continuation of an introduction to the principles of economic analysis and policy. Emphasizes economic stability and growth and the role of public policy.

201 The American Economy (3) F, S

A survey of the basic economic concepts and processes of a private enterprise economy. Included is a consideration of such topics as resource allocation, income distribution, problems of economic stability and growth and the appropriate role of government in a private enterprise society. Not open to students majoring in business administration and economics.

300 Basic Economics (3) F, S, (Open only to graduate students)

A concentrated study of the principles of economic analysis and policy and the basic economic institutions of the United States.

302 Intermediate Economic Analysis (3) F, S

Prerequisite: Economics 200, or 200A,B, or 201, or 300, or equivalent. A theoretical formulation of the principles of the determination of prices and output of goods and productive services in a market system.

303 Intermediate Economic Analysis (3) F, S

Prerequisite: Economics 200, or 200A,B, or 201, or 300, or equivalent. A theoretical formulation of the principles of the determination of the level and fluctuations in real and money income, and the forces underlying economic growth.

322 European Economic History (3) F

Prerequisite: consent of the instructor. The evolution of European economic institutions and their relation to the development of industry, commerce, transportation, and finance in the principal European countries.

324 Money and Banking (3) F, S

Prerequisite: Economics 200, or 200A,B, or 201. A study of the structure and operation of commercial banks and financial institutions including a consideration of the impact of money and capital market developments on economic activity. (Same as Finance 324.)

326 Labor Economics (3) F

Prerequisite: Economics 200, or 200A,B, or 201. An analysis of the basic economic and institutional influences operating in labor markets. Considers relevant aspects of resource allocation, income distribution, economic stability, and growth.

362 Introduction to Econometrics (3) F, S

Prerequisites: Quantitative Methods 361 (to have been taken or being taken concurrently) and Economics 200A,B. An introduction to basic mathematical tools and their application in economic analysis. The measurement and verification of economic relationships by statistical methods. Consideration of some econometric models. (Same as Quantitative Methods 362.)

401 Government and Business (3) F, S

Prerequisite: Economics 200, or 200A,B, and 302. An economic study of business organization, conduct and performance followed by an analysis of the ra-

tionale and impact of public policy on various segments of business and business activities, including the regulated industries, sick industries, and antitrust policy.

402 Monetary and Fiscal Policy (3) F, S

Prerequisites: Economics 200 or 200A,B, and 303. A study of the techniques of monetary and fiscal policy and an appraisal of their relative roles in promoting economic stability and growth.

403 Comparative Economic Systems (3) F, S

Prerequisite: Economics 200, or 200A,B or 300. An analytical comparison of unplanned and planned systems of economic organization as to their theoretical foundations, existing economic institutions, and achievements and failures; capitalism, socialism, communism, and fascism will be examined as exemplified by the United States, England, Russia and prewar Germany.

404 The Soviet Economy (3) S

Prerequisite: Economics 200, or 200A,B, or 201. An analytical evaluation of Soviet economic development including the structure and performance of the Soviet economy and problems of planning and control.

405 History of Economic Thought (3) S

Prerequisites: Economics 302, 303. A study of the development of economic thought as reflected in the evolution of major schools of thought and of leading individual economists as they influenced economic thought and policy.

421 International Trade (3) F

Prerequisite: Economics 200, or 200A,B, or 201. An examination of the theory or international trade and the means and significance of balance of payments adjustments, with an analysis of past and present developments in international commercial and monetary policy. (Same as Marketing 421)

431 Economic Development: Analyses and Case Studies (3) S

Prerequisites: Economics 200, or 200A,B, or 201, and consent of instructor, or equivalent. An examination of the processes of economic growth with special references to developing areas. Considers capital formation, resource allocation, relation to the world economy, economic planning, and institutional factors, with appropriate case studies.

451 Economics of Taxation (3) S

Prerequisite: Economics 200, or 200A,B, or 201. A study of government finance at the federal, state, and local levels with particular reference to administrative problems of public finance, the ethical aspects of taxation, and the impact of taxation and spending on resource allocation and income distribution.

452 Economics of Location (3) S

Prerequisite: Economics 200, or 200A,B, or 201. The theory and principles underlying the location of economic activity.

462 Advanced Econometrics (3) S

Prerequisite: Economics 200, or 200A-B; QM 361 and 362. Development of advanced statistical methods and their application in economic research. Advanced concepts in model building; development of different types of economic models. The use and effect of economic models in public policy.

499 Independent Study (3) F, S

Prerequisites: Economics major or concentration, senior standing and approval by the department chairman. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

Economics

502 Advanced Microeconomic Analysis (3) F

Prerequisites: Economics 200 or 200A,B, and 302. An advanced theoretical formulation of the principles of the determination of prices and outputs of goods and productive services in a market system. Topics include: consumer choice, demand, production, cost, the equilibrium of the firm and the market, and distribution.

503 Advanced Macroeconomic Analysis (3) S

Prerequisites: Economics 200 or 200A,B, and 303. Advanced theory of the determination of the level and fluctuations of real and money income, and the forces underlying economic growth.

505 Methodology in Economic Research (3) S

Prerequisites: Economics 502 or 503 and concurrent enrollment in Economics 503 or 502. A systematic examination of the philosophy and methodology of economic analysis and research. Topics include theory construction, verification and measurement, and the problems associated with policy formulation.

506 Seminar in Micro- and Macro-Economic Applications (3) F

Prerequisites: Economics 502, 503, and 505. Complements the study of methodology in economic research. Students select approved topics and via independent investigation and seminar presentation and critique develop their analytical and research abilities, culminating with an acceptable paper.

510 Competition, Monopoly, and Public Policy (3) F, S

Prerequisite: Economics 200, or 300, or 302. An examination of the economic implications of various forms of market structure and business conduct and considers the application of public policy to various segments of business and business activities, including antitrust policy and regulation of business.

511 Economic Problems and Public Policy (3) S

Prerequisite: Economics 200, or 300, or 303. An examination of the nature and implication of the major economic problems facing the economy and an evaluation of current and alternative policies for their solution. Problems considered will include price level stabilization, balance of payments equilibrium, economic growth, and cyclical and technological unemployment.

596 Selected Topics in Economic Analysis and Policy (3) F, S

Prerequisites: Economics 200 or 200A,B, 302 and 303. Selected topics in economic analysis and policy will be covered in depth, with special emphasis on contemporary research and materials.

597 Project (3) F, S

Open to qualified graduate students. Directed independent inquiry.

598 Thesis (3-6) F, S

Open to qualified graduate students. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

599 Independent Graduate Research (3) F, S

Prerequisites: graduate standing, the consent of the instructor, and approval by the department chairman. Open to qualified graduate students desiring to pursue independent inquiry. May be repeated for credit.

FINANCE

324 Money and Banking (3) F, S

Prerequisite: Economics 200, or 200A,B, or 201. A study of the structure and operation of commercial banks and financial institutions including a consideration of the impact of money and capital market developments on economic activity (same as Econ. 324).

330 Business Finance (3) F, S

Prerequisites: Accounting 201B, or 200, and Economics 200, or 200B. Sources and uses of long-term and short-term capital in business firms, and analysis of business finance.

331 Financial Analysis (3) F, S

Prerequisite: Finance 330. The techniques of financial analysis and their application to business situations.

333 Personal Finance (3) F, S

Prerequisite: None. (This course may not be taken for credit by students electing the finance area of concentration.) Financial problems of the household in allocating resources and planning expenditures. Consideration of housing, insurance, installment buying, medical care, savings and investments.

334 Principles of Insurance (3) S

Prerequisites: Economics 200, or 200B, and Quant Meth 361. Principles of life, casualty and liability insurance; individual and group insurance programs; methods of establishing risks and rates.

335 Investment Principles and Practices (3) F, S

Prerequisite: Finance 330. Principles underlying the selection and management of portfolios, analysis of different types of securities; the role of mutual funds, investment trusts and other investment institutions.

336 Principles of Real Estate (3) F, S

Prerequisite: Economics 200, or 200B. Survey of urban real estate principles and practices; structure and growth of cities; basis of real property values; real estate development and financing.

337 Real Estate Finance (3) S

Prerequisite: Finance 336. Instruments of real estate finance; factors affecting the supply and cost of real estate credit; primary and secondary mortgage markets; real estate as an investment medium.

431 Capital and Money Markets (3) F

Prerequisites: Finance 330 and either Finance 324 or Economics 324, or consent of instructor. Role of capital and money markets in the American economy; markets for new corporate and government issues; secondary markets; interrelation of financial institutions; factors influencing yields and security prices.

433 Problems in Business Finance (3) S

Prerequisite: Finance 331. Comprehensive case studies including problems of estimating funds requirements, long-term financial planning, controlling and evaluating cash flows, and financing acquisitions and mergers.

439 Social Insurance (3) F

Prerequisite: Finance 330. Financial problems and policies in old age pensions, health insurance, unemployment insurance, workman's compensation, and private pension plans.

Management

499 Independent Study (3) F, S

Prerequisites: senior standing and approval by the department chairman. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

532 Seminar in Corporate Financial Management (3) F, S

Prerequisite: Finance 330, and graduate standing. Financial policies and structure of corporations; acquisition and administration of funds; financial control.

533 Seminar in Financial Administration (3) S

Prerequisite: Finance 532. Optimal financing and asset administration; advanced techniques of capital budgeting; application of analytical methods to the administration of the finance function of the business firm.

534 Seminar in Financial Markets (3) F

Prerequisites: Finance 431 or Finance 324 and consent of the instructor. Structure and operations of major financial institutions; portfolio composition, price-cost problems, and market behavior; analysis of financial intermediation and interrelation of financial institutions and markets.

535 Seminar in Investment Management (3) F

Prerequisites: Finance 335 and graduate standing. Problems of investment and portfolio management; concepts of risk evaluation and investment criteria; analysis of interest rate movements; investment timing; valuation of securities; regulation of securities markets.

536 Seminar in Risk Management (3) S

Prerequisites: Finance 334 and graduate standing. Techniques of risk management, structure of risk management, insurance planning and control, risk management programs.

597 Project (3) F, S

Open to qualified graduate students. Directed independent inquiry.

598 Thesis (3-6) F, S,

Open to qualified graduate students. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

MANAGEMENT

341 Principles of Management (3) F, S

Prerequisite: Economics 200 or 200 A,B. The fundamentals of management universal to all organizations; covers such studies as planning, organizing, activating, and controlling.

342 Production Management (3) F, S

Prerequisite: Management 341. The study of modern manufacturing and its methods of operation; the efficient use of management, labor, and productive equipment; and demonstrations of techniques.

343 Personnel Management (3) F, S

Prerequisite: Management 341 or consent of the instructor. A study of the personnel function, its activities, and its problems. Emphasis upon management's responsibilities for selection, development, and effective utilization of personnel.

344 Human Relations in Management (3) F

Prerequisite: Management 341 or consent of the instructor. The human relations problems of work situations pertaining to concepts such as motivation, leadership, organizational health, and adapting to change. Special emphasis is placed upon the contributions of authorities, case studies, and audiovisual presentations.

346 Business Law (3) F, S

The philosophy, institutions and role of the law in business and society, with emphasis upon the functions of courts and attorneys, and upon case studies in the areas of contracts and corporation law.

347 Business Law (3) F

Prerequisite: Management 346. The philosophy, institutions and role of the law in commercial transactions, with emphasis upon the uniform commercial code and case studies in the areas of sales, security devices, personal property, bailment and negotiable instruments.

441 Labor-Management Relations (3) F

Prerequisite: Management 341 or consent of the instructor. The course provides an understanding of the impact of labor-management relations upon labor, management, and the public. Proper grievance procedure, collective bargaining, and the settlement of disputes are among the subjects that are examined.

442 Labor Law (3) S

Prerequisites: Management 341, 346 or consent of the instructor. The study of labor law and its effects upon American society. Federal and state legislation, and actions of regulatory bodies are explored by means of case studies.

444 Management of Systems (3) F, S

Prerequisite: Management 342. The theory and management of systems and procedures applied to the control and coordination of the whole complex of operations in modern institutions. The course explores work such as charting, design of systems and procedures, work measurement, and general systems theory. (2 hours lecture; 2 hours activity)

445 Production Control Analysis (3) F

Prerequisites: Management 342, introductory calculus, statistics, and principles of economics or consent of the instructor. The quantitative analysis of production and quality control, involving group problems related to such areas as mathematical programming, statistical analysis, and economic analysis.

446 Managerial Economics (3) F, S

Prerequisites: Quantitative Methods 361, Management 341, and consent of the instructor. The use of applied economics, analyses, and statistical methods in the decision making process, by means of group problems; the character of the firm's demand, costs, prices, and profits; short- and long-run planning for a business enterprise; and the relationship between the firm and the economy.

447 Management Decision Games (3) F

Prerequisites: The business administration core or consent of the instructor. A simulation of an oligopolistic industry to provide the student with an opportunity, through group problems, to use statistics and other analytical tools to make managerial decisions in the functional areas of management. (2 hours lecture; 2 hours activity)

449 Seminar in Business Policies (3) F, S

Prerequisites: Accounting 201A,B, or 200, Finance 330, Management 341, Marketing 351, and senior standing. The seminar is limited to seniors and graduate

Management

students. Through an analysis of integrative cases and problems the student is encouraged to use his business and liberal arts training. Individual and team efforts resolve decision-making policies and actions.

499 Independent Study (3) F, S

Prerequisites: management concentration, senior standing, and approval by the department chairman. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

541 Seminar in Production Problems (3) F

Prerequisites: graduate standing and the consent of the instructor. A seminar designed to focus attention on current production problems, trends, and application of dynamic techniques. Current literature review, case study analysis, and special projects are basic elements.

542 Seminar in Labor Relations (3) S

Prerequisites: graduate standing and consent of the instructor. Theories and philosophies of union-management relations in modern industrial society with attention to trends in nonindustrial organizations. Issues in collective bargaining contract administration, labor law, and government regulation. Discussion and analysis of literature.

543 Seminar in Personnel Administration (3) F

Prerequisites: graduate standing and the consent of the instructor. The seminar provides the graduate student with an opportunity to study cases, problems, and significant literature in the field in order to develop a comprehensive understanding of personnel administration and human relations.

544 Organizational Behavior, Theory, and Administration (3) S

Prerequisites: graduate standing and consent of the instructor. The analysis of human behavior in organization, studies in organizational theories, and administrative action.

548 Seminar in International Management (3) S

Prerequisites: graduate standing and consent of the instructor. Problems in managerial qualifications and training, political structure within and without the operations, foreign receptivity to United States business, organizing and controlling the international firm. Management in selected countries is examined.

549 Seminar in Policy Planning and Administration (3) F

Prerequisites: graduate standing and consent of the instructor. Planning, implementing, and controlling policy strategies to achieve objectives are considered. The executive's role in the overall operations of the enterprise and its resources are examined, and supported by cases, literature and training techniques in practice.

597 Project (3) F, S

Open to qualified graduate students. Directed independent inquiry.

598 Thesis (3-6) F, S

Open to qualified graduate students. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

599 Independent Graduate Research (3) F, S

Prerequisites: graduate standing, the consent of the instructor, and approval by the department chairman. Open to qualified graduate students desiring to pursue independent inquiry. May be repeated for credit.

MARKETING

307 Distribution Costs (3) S

Prerequisite: Accounting 201B and Marketing 351. The development of quantitative measures for marketing activity; costs of distributing through different channels of distribution, advertising versus personal selling, and movement activities; development of sales budgets, standard costs, and the analysis of actual performance in the light of budgets and standards. (Same as Accounting 307)

351 Principles of Marketing (3) F, S

Prerequisite: Economics 200. Marketing organization and methods for the individual business with serious consideration of the social and economic aspects of the distribution task. Topics include the consumer, his place and his problems in the marketing area; marketing functions, institutions, and policies; legal and political environment for marketing activity; and an evaluation of the present marketing system.

352 Principles of Retailing (3) F

Prerequisite: Marketing 351. Retail problems of location; organization; buying; selling media and methods; pricing; and merchandising. Emphasis will be placed upon operating procedures and control, planning, budgeting, and costs.

353 Marketing Administration (3) F, S

Prerequisite: Marketing 351. Survey of the major problems facing the marketing executive, including product planning, pricing, market and analysis, sales potentials, marketing organization, and administration of the sales force.

354 Principles of Advertising (3) S

Prerequisite: Marketing 351. The management of the advertising function, including the role of advertising in marketing strategy, budgetary considerations, allocation among media, measurement of effectiveness, administration and control, and its economic and social implications. Case method of instruction is emphasized.

355 Credit and Credit Administration (3) F

Prerequisite: Marketing 351. The general nature and functions of credit, credit instruments; the operation of the credit department; sources of credit information; acceptance of credit risk; establishment of credit limits; and the problem of collections.

356 Creative Motivation in Marketing (3) S

Prerequisite: Marketing 351. Personal salesmanship and the application of the findings of the behavioral sciences to selling and group dynamics as they relate to the creative and promotional aspects of the business.

357 Industrial Purchasing (3) S

Prerequisite: Marketing 351. The principles and practices of purchasing for industrial organizations. Major buying policies, sources of materials, quantity and quality considerations, and the relation to production cost.

358 Physical Distribution (3) F

Prerequisite: Marketing 351. Consideration of the logistics problems of physically distributing products and the principles and practices of solving them. An evaluation of the transportation and storage of products based on considerations of cost, time, and service.

421 International Trade (3) F

Prerequisite: Economics 200. (Same as Economics 421)

Marketing

452. Marketing Research (3) F, S

Prerequisites: Marketing 351, and Quantitative Methods 361. The application of scientific methodology as an aid in solving problems of product planning, pricing, promotion, and distribution. Practical application is emphasized through class projects and case problems. (Two hours lecture; two hours activity)

453 Marketing to the Government (3) S

Prerequisite: Marketing 351. The marketing of defense and nondefense products to the government. The nature and administration of contractual agreements with government agencies.

454 Advertising Problems (3) F

Prerequisites: Marketing 354 or consent of the instructor, plus senior standing. Management of the advertising function in the marketing program. A study of the formulation of advertising policies, involving primarily an analysis of cases dealing with the role of advertising in marketing, the definition and choice of advertising objectives, strategy, appropriation policy, media selection, evaluation of advertising results, and the organization and implementation of the advertising program. Cases, simulations, and readings.

459 Marketing Problems (3) F, S

Prerequisite: Marketing 351. It is recommended that the student have completed at least two advanced marketing courses or have equivalent business experience. Case studies of problems facing the marketing executive; identification and analysis of the problems; selection and evaluation of alternative solutions; and implementation of recommended solutions.

499 Independent Study (3) F, S

Prerequisites: Marketing concentration, senior standing, and approval by the department chairman. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

551 Seminar in Marketing Problems (3) F, S

Prerequisites: Marketing 351 and graduate standing. A managerial approach to the major marketing problems faced by industry: e.g., definition of and organization for the marketing task; demand analysis; decisions concerning product, price, promotion, and trade channels. A firm's adjustment to its marketing environment with emphasis on competitive strategy. The case approach supplemented with simulations and topical readings. (Credit not given for master's degree candidates who have previously taken Mktg 459.)

552 Seminar in Pricing and Price Policy (3) S

Prerequisite: Marketing 551. A critical analysis of the pricing problems of a firm with alternative choices and diverse objectives. The pricing function will be examined from the standpoints of economic theory, management science, business practices, legal constraints, and ethical considerations. Relationship of pricing objectives, policies, strategies, and methods to market behavior and the goals of the firm. Pricing policies among businesses and their economic and social implications.

553 Seminar in Product Planning (3) F

Prerequisite: Marketing 551. A course designed to assist marketing management in the formulation and execution of marketing plans for new and existing products. An examination of the management decision areas and procedures required for search, preliminary evaluation, development and testing, and commercialization of products. Particular emphasis on solving problems arising from product programs developed to assure corporate growth.

554 Seminar in Promotion (3) S

Prerequisites: Marketing 551 or instructor's approval. A critical analysis of the promotion mix as employed by small, medium and large business organizations in their efforts to maximize profitable operations. Particular emphasis will be given to: determination of promotional goals, planning, budgeting, and controlling promotional programs; and measuring the effectiveness of the promotional effort.

597 Project (3) F, S

Open to qualified graduate students. Directed independent inquiry.

598 Thesis (3-6) F, S

Open to qualified graduate students. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

599 Independent Graduate Research (3) F, S

Prerequisites: graduate standing, the consent of the instructor, and approval by the department chairman. Open to qualified graduate students desiring to pursue independent inquiry. May be repeated for credit.

QUANTITATIVE METHODS**264 Computer Programming (1) F, S**

Introduction to problem-oriented languages of computers. The solving of problems using computer programming methods and techniques.

361 Business and Economic Statistics (3) F, S

Prerequisite: Math 120 or equivalent. The collection, analysis and presentation of statistical data; theory of probability, sampling, experimental method, correlation, time series and index numbers, and their application to business and economic problems.

362 Introduction to Econometrics (3) F, S

Prerequisites: Quant Meth 361 (may be taken concurrently), and Economics 200A,B. An introduction to basic mathematical tools and their application in economic analysis. The measurement and verification of economic relationships by statistical methods. Consideration of some econometric models. (Same as Econ. 362)

364 Computer Logic and Programming (3) F

Prerequisite: College algebra, Quant Meth 264, or equivalent. An introduction to computer systems; elements of symbolic logic and number systems; programming methods, techniques, and applications.

446 Computer Programming Theory (3) S

Prerequisite: Mathematics 150A or equivalent. Selected topics from the technology of computation with applications in business.

461 Advanced Statistics (3) F

Prerequisites: Math 150B or equivalent, Quant Meth 361. An advanced treatment of the theory and application of the topics covered in Quant Meth 361, using the methods of the calculus where appropriate.

462 Mathematical Models in Business and Economics (3) S

Prerequisites: Math 120, Quant Meth 361, and Math 150A, or Quant Meth 362, or equivalent. The construction and application of mathematical models to business decision and economic analysis.

Quantitative Methods

464 Computer Applications in Industry (3) S

Prerequisites: Quant Meth 264 or consent of instructor. An examination of the role of computers in industrial processes and automation, its effects on economic efficiency, control, feedback communication, consideration of real time on-line systems, and functional applications of computers in business and industry.

465 Linear and Nonlinear Programming (3) F

Prerequisites: Quant Meth 264, Math 120 or equivalent, Quant Meth 361. The study of the decomposition principle. Problems of data collection, problem specification, computation. Applications of quantitative programming to industrial and management problems.

467 Statistical Quality Control (3) S

Prerequisites: Quantitative Methods 361. Shewhart Control Charts for variables, percent defective, and defects. Tolerances, process capacity, specialized control charts, and batch processing problems. Bayesian aspects of process control.

499 Independent Study (3) F, S

Prerequisites: quantitative concentration, senior standing, and approval by the department chairman. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

560 Operations Research (3) F, S

Prerequisites: Math 150B, or equivalent, and Quant Meth 361, or consent of the instructor. An examination of the nature and scope of operations research, its methodology, and applications. Emphasis will be placed on model construction and models on inventory control, queuing, sequencing, scheduling, replacement, and mathematical programming.

563 Statistical Decision Theory (3) S (Formerly 463)

Prerequisites: Mathematics 120 and Quantitative Methods 361. The analysis and application of advanced statistical techniques to the problems of management decision-making under conditions of uncertainty.

565 Seminar on Computers in Industry (3) S

Prerequisites: Quant Meth 364, Quant Meth 464 or consent of instructor. An examination of developments and innovations concerning computers in industry. Artificial intelligence, information retrieval, and time sharing.

566 Design of Experiments (3) S

Prerequisites: Quantitative Methods 361 and graduate standing. A survey of the fundamentals of experimental design, including analysis of variance, factorial experiments, nested designs, confounding, and fractional replication.

597 Project (3) F, S

Open to qualified graduate students. Directed independent inquiry.

598 Thesis (3-6) F, S

Open to qualified graduate students. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

599 Independent Graduate Research (3) F, S

Prerequisites: graduate standing, the consent of the instructor, and approval by the department chairman. Open to qualified graduate students desiring to pursue independent inquiry. May be repeated for credit.

SCHOOL OF EDUCATION

EDUCATION, ELEMENTARY

331 Elementary School Principles, Curricula, and Methods (8) F, S

Prerequisites: Educ 311, and admission to teacher education. Principles, curricula, methods, and materials of elementary school instruction with major emphasis on reading, language arts, arithmetic, social studies, and science. Includes audiovisual instruction, methods, and techniques. Required field work. Required of all candidates for the standard teaching credential with specialization in elementary school teaching. (6 hours lecture, 2 hours activity, and 3 hours laboratory)

339 Student Teaching in the Elementary School and Student Teaching Seminar (8) F, S

Prerequisites: Educ 331 and admission to student teaching. Participation in a regular elementary school teaching program for the greater part of every school day. Includes a two-hour seminar each week in problems and procedures of elementary school teaching. Concurrent enrollment in other courses is discouraged. (Minimum of 30 hours a week in an elementary school, 2 hours per week seminar.)

431 Principles and Curricula of the Elementary School (2) F, S

Prerequisite: Educ 311 or consent of the instructor. An introductory course in elementary education. Stress on major principles and basic curricular considerations. Importance of the elementary school system to society.

432 Teaching—in the Elementary School

Prerequisites: Educ 311 or consent of the instructor. A series of courses, listed dually in the School of Education and in the other appropriate divisions, dealing with objectives, methods, and materials of teaching the various subjects and areas in the elementary schools. The courses are professional education courses and applicable toward credential requirements. Detailed descriptions of the courses are to be found in the materials of other departments and divisions within this catalog.

For Lang Ed 432 Teaching Foreign Languages in the Elementary Schools (2) F, S

The following courses have been designed specifically for students who are part-time students:

Eng Ed 432 Teaching Language Arts in the Elementary School (2) F, S

Math Ed 432 Teaching Mathematics in the Elementary School (2) F, S

Sci Ed 432 Teaching Science in the Elementary School (2) F, S

436 Child Study Techniques for Teachers (3) S

Prerequisite: Educ 331 or permission of the instructor. This course deals with the techniques the classroom teacher may use in understanding individual children within his classroom who do not respond to the teacher and his peers in typical ways.

437 Problems in Early Elementary Education (3) S

Prerequisites: Educ 339 and consent of instructor. Study of current literature and recent research in the area of education of young children through individual and group study. Emphasis will be placed on problems centered in cognitive processes, content, structure, and instruction at the early elementary education level.

Education, Junior College

506 Curriculum and Research in Elementary Education: Reading (3) F, S

Prerequisite: Educ 339 or consent of instructor. Study of curriculum and research in reading, including materials, organization, and methods of instruction.

507 Curriculum and Research in Elementary Education: Social Studies (3) S

Prerequisite: Educ 339 or consent of instructor. Study of significant research developments and materials, criteria for planning and improving social studies programs, and current techniques of teaching.

508 Curriculum and Research in Elementary Education: Foreign Languages (3) S

Prerequisite: Educ 339 or permission of instructor. Study of pertinent investigations and their application in the classroom together with significant curriculum developments and organization in the newest area facing the elementary school educator. Criteria for appraising programs, personnel, and materials also will be discussed.

537 Seminar for Elementary Education (3) S

Prerequisite: Educ 339 or 739 or consent of the instructor. A study of problems and issues in elementary education, their causes and possible solutions.

709 Supervision of Student Teaching (3) F

Prerequisite: Possession of a teaching credential and one year of teaching experience. Designed for teachers who supervise student teachers. Emphasis on principles and procedures of effective supervision and research.

739 Student Teaching in the Elementary School and Student Teaching Seminar (8 or 4) F, S

Prerequisites: Educ 331, admission to student teaching, and postgraduate status. Participation in a regular elementary school teaching program for the greater part of every school day. Includes a two-hour seminar each week in problems and procedures of elementary school teaching. Concurrent enrollment in other courses is discouraged. (Minimum of 30 hours a week in an elementary school, 2 hours per week seminar.)

EDUCATION, JUNIOR COLLEGE

721 Philosophy and Objectives of Junior College Education (2) F

Prerequisite: postgraduate standing or consent of instructor. Origins of the junior college movement in higher education in the United States; economic, technological, and social forces creating needs for new and different post-high school education; objectives of junior college education; relationships to secondary and higher education; functions of the junior college; curriculum development and organization.

744 Principles of Junior College Teaching (3) S

Prerequisite: postgraduate standing or consent of instructor. Psychological foundations of junior college teaching, measurement and evaluation of learning. Educational and philosophical bases for instructional procedures in the junior college. Instructional procedures including audiovisual materials, junior college class observations. (2 hours seminar, 2 hours fieldwork)

799 Junior College Student Teaching and Seminar (4) F, S

Prerequisites: Educ 744. Student teaching in the student's major field in a cooperating junior college for one semester. Weekly seminar on curriculum development and organization in the junior college, instructional procedures and materials, and instructional problems of the junior college student teacher. (Minimum of 9 hours a week in a junior college; 2 hours per week in seminar)

**EDUCATION, PSYCHOLOGICAL FOUNDATION, MEASUREMENTS
AND STATISTICS**

311 Psychological Foundations of Education (4) F, S

Prerequisite: Psych 101. Prerequisite to other courses in the professional education sequence. Learning theory, thinking processes, and human growth and development. (3 hours lecture; 2 hours activity)

312 Human Growth and Development (3) F, S

Prerequisite: Psych 101. A comprehensive study of human growth and development with emphasis on childhood, adolescence, and middle and old age. Includes mental, social, emotional, and physical development.

451 Principles of Educational Measurement (3) F, S

Prerequisite: Education 311 or Psychology 311. Introduction to basic concepts, theory, and procedures for construction of informal and standardized tests. Application of measurement theory and statistical techniques toward problems of analysis, scaling, norming, and interpretation of test results. Practice in item writing for short classroom tests and intensive analysis of selected commercial standardized tests.

510 Research Design and Analysis (3) F, S

Prerequisite: bachelor's degree, intent to complete program leading to MS in Education. Educ 451 will be a prerequisite in 1969. Hypothesis formation, instrumentation, elements of design, treatment of data, hypothesis testing and inference, and analysis of educational data. Develop a research proposal.

511 Survey of Educational Research (3) F, S

Prerequisites: Educ 451 or equivalent; teaching experience. Review of descriptive statistics and statistical inference as applied to educational problems. Analysis of representative research papers. Principles of research design. Prepare a research proposal.

EDUCATION, PUPIL PERSONNEL SERVICES

351 Principles of Guidance (3) F, S

Prerequisite: Psych 311 or Educ 312. Guidance related to educational objectives and needs of youth. Emphasis on special needs created by individual exceptionality, size and complexity of the modern educational system and modern society; general requirements, services, organization, and structure of a successful guidance program. Students seeking the special education credentials will emphasize the counseling and guidance of the exceptional student.

550 Counseling Theories and Processes (3) F, S (Formerly 452)

Prerequisite: Educ 351. Seminar in the dynamics of counselor and client relationships, techniques and processes of various levels, and relation to personality theory. Major project and supervised clinical practice required.

551 Educational and Career Orientation (3) F, S

Prerequisite: Educ 550 or permission of instructor. Seminar in the principles of evaluating, classifying, and disseminating occupational and educational information in the guidance program; sources of occupational literature, occupational research, vocational surveys, and methods of studying the individual as a unique whole to help him develop his greatest career potential. Emphasis on the psychological, sociological, economic, and clinical implications of career and educational choice. A major project in career information is developed under supervision.

Education, Reading

552 Group Processes in Guidance (3) F, S

Prerequisite: Educ 550 or permission of instructor. Intensive study of the dynamics of group processes including the function of leadership, effective membership and techniques of group problem solving. Special emphasis on clinical group counseling including a semester project in a school setting.

553 Administration and Organization of Pupil Personnel Programs (3) S

Prerequisites: Educ 551 or permission of instructor. Development, organization, and administration of the pupil-personnel services. Seminar on analysis and evaluation of pupil personnel services by the case study method, curriculum, counselor competencies, staffing.

555 Individual Diagnosis (3) F, S

Prerequisites: Educ 451, 550, or consent of instructor. Clinical study of the techniques of individual diagnosis including the synthesis and interpretation of information. Use of the life or developmental record, self-ratings, behavior ratings and tests as they relate to counseling with the normal and abnormal pupil. Identification and remediation of learning difficulties emphasized.

557A,B Seminar in School Counseling (1,1) F, S

Prerequisite: Educ 559A or concurrent enrollment in Educ 559B and consent of instructor. Final two-semester terminal sequence for the master of science in education with a concentration in school counseling. Supervised individual project or thesis required for the degree.

559A,B Fieldwork in Pupil Personnel Services (2-6) F, S

Prerequisite: Educ 551, 552, 555, admission to the CSCF pupil personnel credential program and permission of instructor. Guidance and counseling in the school setting under the supervision of local coordinator and college staff. Work assignments vary for school counselors, psychometrists, and child welfare workers. Work in a counseling relationship, parent conferences, and follow-up studies. May be repeated for credit up to a maximum of 12 units. (6 hours weekly fieldwork; 2 hours weekly conference)

EDUCATION, READING

516 Etiology of Reading Difficulties (3) F (Formerly 416)

Prerequisite: teaching experience, Educ 506, and consent of instructor. Studies of the factors underlying learning disabilities in reading in children, adolescents and young adults.

581 Analysis of Reading Difficulties (3) F, S (Formerly 481)

Prerequisite: bachelor's degree, teaching experience, Standard Teaching Credential, Educ 506, and consent of the instructor. Analysis and diagnosis of reading difficulties. Techniques and methods of prevention and treatment. Individual remediation of student. Primary through secondary. (2 hours lecture and 3 hours laboratory)

582 Analysis of Corrective Reading Practices (3) F, S (Formerly 482)

Prerequisite: Educ 506, 511, 516, 581, and consent of the instructor. Critical evaluation of reading and remedial reading practices. Short-term project in a school situation. (2 hours seminar and 2 hours activity)

583A,B Remedial Reading: Casework (3) F, S

Prerequisite: Educ 506, 511, 516, 581, 582, and consent of instructor. Diagnosis and remediation in reading through casework technique. Conferences with teachers, parents, consultants, and administrators. Fieldwork. (2 hours seminar, 2 hours fieldwork)

EDUCATION, SCHOOL ADMINISTRATION

503 Foundations for Administrative Leadership (3) F, S

Prerequisite: consent of the instructor. Seminar on cultures and values to which schools must contribute; introduction to community sociology, tax systems and public administration; the literature of leadership. Screening for admission to program. Occasional special meetings. Required of all students during first registration in school administration and supervision at this college.

505 The Supervision of Curriculum (4) F, S

Prerequisite: Educ 503. Seminar on development of a quality program of instruction in both elementary and secondary schools; appraisal of programs of instruction; advanced principles of curricular review and modification.

Evaluation of subject matter competence in area of supervisory specialization. Meets credential requirements in principles of curriculum construction and evaluation; supervision of instruction and curriculum in both elementary and secondary schools.

561 Organization of School Systems (3) F, S

Prerequisite: Educ 503. Seminar on structure, functions, trends, fiscal responsibilities and issues in respect to the government of education at federal, state, county, and local school district levels. Basic principles in school organization and administration. Special emphasis on intergovernmental relations and impact at local level.

563 Principles of School Personnel Administration (2) F, S

Prerequisite: Educ 503. Seminar on principles of organizational behavior, social processes inherent in effective leadership, and techniques of school personnel management.

564 Seminar in School Law (2) F

Prerequisite: consent of instructor. School law as a reflection of public policy; the California Education Code and the California Administrative Code, Title 5, and county counsel opinions as they affect administration, instruction, and financial management of public schools. Court attorney general decisions in interpreting school law. Legal basis for public education in California. An elective course in school administration.

565 Seminar in School Finance, Business Administration, and Buildings (3) S

Prerequisite: consent of instructor. Emphasis on school finance, business administration, and buildings as they implement an effective educational program. A study of financial principles. School revenues and expenditures, budgetary procedures and processes, cost analysis; business management, and salary policies. An elective course in school administration.

566 The Elementary School Principal and Supervisor (3) F, S

Prerequisites: Educ 503, 505, 511, 561, 563. May be taken concurrently with Educ 769. Seminar on leadership roles of elementary school principal and supervisor, pupil personnel and instructional program in elementary school; working relations and morale among staff, community and pupils; parent education; relations with central district staff; management and recordkeeping functions; teacher evaluation.

567A,B Fieldwork and Seminar in School Administration (2,2) F, S

Prerequisites: Educ 566 or 586 or concurrent registration, and consent of instructor. Two-semester terminal sequence required for the M.S. in Education with

Education, Secondary

a concentration in school administration. Includes directed field work in selected public schools and district offices. Supervised project or thesis required for degree. (4 hours weekly fieldwork, 2 hours weekly conference)

586 The Secondary School Principal and Supervisor (3) F, S

Prerequisites: Educ 503, 505, 511, 561, 563. May be taken concurrently with Educ 789. Seminar on leadership roles of secondary school principal and supervisor, pupil personnel and instructional program in the secondary school; the development and administration of vocational and adult education; working relations and morale among staff, community and pupils; relations with central district staff, the management and recordkeeping functions; teacher evaluation.

769 Directed Fieldwork in Elementary School Administration and Supervision (2) F, S

Prerequisite: Educ 566 or concurrent registration. Work in selected elementary schools and district offices. Further details in special publications. (8 hours weekly fieldwork, 1 hour weekly conference)

789 Directed Fieldwork in Secondary School Administration and Supervision (2) F, S

Prerequisite: Educ 586 or concurrent registration. Work in selected secondary schools and district offices. Further details in special publication. (8 hours weekly fieldwork, 1 hour weekly conference)

EDUCATION, SECONDARY

340 Principles and Curricula of Secondary Education (3) F, S

Required first course in the professional sequence for the standard teaching credential with specialization in secondary teaching. Principles of secondary education in the United States: organization, curriculum, and teaching practices. Correlated with methods and materials courses in the major. Two hours of observation per week in selected junior and senior high school classes. Application for admission to teacher education is included. (2 hours lecture, 2 hours fieldwork)

442 Teaching—in the Secondary School

Prerequisites: 20 units in the major, Education 311, Education 340, admission to teacher education, and senior standing; or consent of the instructor. A series of courses, listed dually in the School of Education and in the other appropriate departments, dealing with objectives, methods, and materials of teaching, including audiovisual instruction, the various subjects and areas in secondary schools. Required, before student teaching, of students presenting majors in these areas or subjects for the general secondary credential or the standard teaching credential with specialization in secondary school teaching. Students without teaching experience must register concurrently in Educ 449 to complete a teacher aide assignment in high schools.

Art Ed 442 Teaching Art in the Secondary School (2) F

Bus Ed 442 Teaching Business in the Secondary School (2) S

Drama Ed 442 Teaching Drama in the Secondary School (2) S

Engl Ed 442 Teaching English in the Secondary School (2) F, S

For Lang Ed 442 Teaching Foreign Languages in the Secondary School (2) S

Journ Ed 442 Teaching Journalism in the Secondary School (2) S

Math Ed 442 Teaching Mathematics in the Secondary School (2) S

Mus Ed 442 Teaching Vocal Music in the Public Schools (2) S

Mus Ed 443 Teaching Instrumental Music in the Public Schools (2) S

PE 442 Teaching Physical Education in the Secondary School (2) F

Sci Ed 442 Teaching Science in the Secondary School (2) F

Soc Sci Ed 442 Teaching Social Sciences in the Secondary School (2) F, S

Speech Ed 442 Teaching Speech in the Secondary School (2) F

443 Principles of Core Curriculum (2) S

Prerequisite: teaching experience or consent of the instructor. Unity and inter-relationships of human learning and behavior and the curricular processes and arrangements by which this may be achieved. Seminar on development, principles, and application of core curricula; guidance functions; evaluation; and roles of the teacher.

445 Junior High School Education (3) F

Prerequisite: Educ 442 or Educ 331 or consent of instructor. Seminar on principles and procedures for developing the junior high school program. Purposes, curriculum, and organization of the junior high school are stressed including examination of recent innovations and proposals. Designed for students with elementary or secondary backgrounds who plan to teach in the junior high school.

446 Secondary School Curriculum (3) F, S

Prerequisite: student teaching or teaching experience or consent of instructor. Fundamentals of curriculum development. Seminar on current issues within secondary education. Curricular organization and current practices. Survey and evaluation of newer curricular programs. Paper or project of creative, analytic or review of literature type is required. Designed for experienced teachers interested in curriculum development and/or instructional supervision.

449 Field Work in Methods of Teaching in Secondary Schools (1) F, S

Prerequisite: Educ 340, Educ 311, admission to teacher education or consent of instructor. Participation in the instruction of a secondary school class as a teacher aide. Integrated with coursework in the teaching of the major. Must be taken concurrently with Educ 442 and students must allow sufficient time in their schedules, at the same hour each day, to serve as a teacher aide.

547 Seminar for Secondary Education (3) F

Prerequisite: Educ 749 or consent of the instructor. Persistent problems in secondary education and survey of related literature; causes of and solutions for these problems. Application of scientific method to educational problems, sources of educational research, and to techniques of cooperative thinking.

749 Student Teaching In—in the Secondary School and Seminar (6 or 2) F, S

A series of courses in student teaching and seminars listed dually in the School of Education and in the other appropriate departments.

Prerequisites: Educ 442, Educ 449, and admission to student teaching. Student teaching for the general secondary credential or the standard teaching credential with specialization in secondary school teaching. Participation in a regular secondary school teaching program for half-days for a full semester. Includes a seminar each week in problems and procedures of secondary school teaching, under the direction of the respective college supervisor. (Minimum of 15 hours a week in a secondary school; 2 hours per week in seminar)

Education, Service Courses

- Art Ed 749 Student Teaching in Art in the Secondary School and Seminar**
(6) F, S
- Bus Ed 749 Student Teaching in Business in the Secondary School and Seminar**
(6) F, S
- Drama Ed 749 Student Teaching in Drama in the Secondary School and Seminar**
(6) F, S
- Engl Ed 749 Student Teaching in English in the Secondary School and Seminar**
(6) F, S
- For Lang Ed 749 Student Teaching in Foreign Languages in the Secondary School and Seminar**
(6) F, S
- Journ Ed 749 Student Teaching in Journalism in the Secondary School and Seminar**
(6) F, S
- Math Ed 749 Student Teaching in Mathematics in the Secondary School and Seminar**
(6) F, S
- Mus Ed 749 Student Teaching in Music in the Secondary School and Seminar**
(6) F, S
- PE 749 Student Teaching in Physical Education in the Secondary School and Seminar**
(6) F, S
- Sci Ed 749 Student Teaching in Science in the Secondary School and Seminar**
(6) F, S
- Soc Sci Ed 749 Student Teaching in Social Science in the Secondary School and Seminar**
(6) F, S
- Speech Ed 749 Student Teaching in Speech in the Secondary School and Seminar**
(6) F, S

EDUCATION, SERVICE COURSES

491 Audiovisual Education (2) F, S

Prerequisites: Educ Found 311, Educ Sec 442, or consent of the instructor. Media in communication, psychological bases, development, curricular function, evaluation. Survey of equipment and materials available, preparation of instructional materials for classroom use. (1 hour lecture, 2 hours activity)

499 Independent Study (1-3) F, S

Prerequisite: senior or graduate standing, approval of instructor and department prior to registration. Conduct of an individual investigation under supervision of a faculty member; investigation might be an experiment, a library study, or a creative project; only students of demonstrated capacity and maturity will be approved; adequate prerequisite study necessary. May be repeated for credit.

EDUCATION, SOCIAL FOUNDATIONS

401 Sociological, Historical, Philosophical Foundations of Education (4) F, S (Formerly 301)

Prerequisites: Educ 311, admission to teacher education or consent of the instructor. Survey of social, historical, and philosophical foundations of education from ancient times to the present, discussed in the light of their effect upon modern educational theory and practice.

402 Comparative Education (3) F, S

Prerequisite: consent of instructor. Acceptable as approved option for MS program and/or elective in senior year. Seminar on international educational programs; study of philosophies and practices in administration, control, financing, and operation of educational systems of selected areas and countries.

403 History of Education (3) F

Prerequisites: history of world civilization and Educ 331 or Educ 442 or consent of the instructor. The main streams of educational history in Europe and America, with particular emphasis on the ways these main streams have affected the current scene in the United States.

406 Educational Sociology (3) S

Prerequisite: Educ 331 or Educ 442, or consent of the instructor. The school in the social order; analysis of cultural factors affecting school, and the special culture of the school; consideration of research in selected areas of the school-culture relationship.

501 Philosophy of Education (3) S

Prerequisites: postgraduate standing and Educ 339 or 739 or Educ 749, or consent of the instructor. Uses of theories of knowledge, value and reality in dealing with educational problems; application of contemporary systems of thought to education.

SPECIAL EDUCATION**471 Exceptional Children (3) F, S**

Prerequisite: Educ 311. Seminar on the study of children who deviate from the average in the elementary and the secondary schools; physically handicapped, mentally retarded, gifted, socially maladjusted, emotionally disturbed, and delinquent. Special educational services, curriculum, procedures, and materials necessary to promote their maximum development.

472 Gifted Children (2) F

Prerequisites: Educ 311 and Educ 331, or Educ 431, or Educ 442. Identification, principles of instruction, grouping, individualized instruction, classroom enrichment. Problem solving and research experiences in science, social studies, and mathematics, reading programs and literature, creative writing, oral language.

473 Mental Retardation and Brain Injury (3) F

Prerequisite: Educ 471. Organic and cultural basis of mental retardation and brain injury, including social, psychological, and vocational problems. Child growth, sensory development, learning characteristics of mentally retarded and brain injured children, and techniques of working with parents will be considered.

474 Curriculum and Methods for Teaching the Mentally Retarded (3) S

Prerequisite: Educ 473 and Educ 331 or Educ 442. Curriculum development, methods, and materials for teaching the educable and trainable mentally retarded at the elementary and secondary levels.

475 Observation and Individual Instruction with the Mentally Retarded (3) F

Prerequisite: Educ 474. Supervised observation and participation with the educable and the trainable mentally retarded at both the elementary and secondary levels of education. (Three hours of observation and participation per week plus two hours of lecture and discussion.)

477 The Educationally Handicapped Child (3) F

Prerequisite: Educ 471 and consent of instructor. Behavioral characteristics of the educationally handicapped child, the child with a neurological handicap or a behavioral disorder as defined by the California Education Code. Educational procedures, perceptual and motor training, evaluation, parent guidance.

Health Education

514 Graduate Seminar: Behavioral Research on Children with Learning Disorders (3) F

Prerequisites: Educ 511, consent of instructor, and teaching experience with exceptional children. Critical analysis of behavioral research on children with learning disorders. Resources, criteria for evaluation of studies with exceptional children, historical view of research in special education. Research relating to learning and handicapping conditions, and efficacy of special methods and materials will be reviewed.

570 Graduate Clinic in Exceptional Children: Advanced Developmental Psychology (3) F

Prerequisite: Educ 555. Clinical work with children focusing on diagnosis, prescription and remediation of developmental deficiencies: language, motor, perception. Students will spend three hours a week in direct work with children and two hours in seminar.

571 Graduate Clinic in Exceptional Children: Advanced Psychology of Learning (3) S

Prerequisite: Educ 570. Clinical work with children focusing on diagnosing, prescriptions and remediations of educational and behavioral deficiencies. Students will spend three hours a week in direct work with children and two hours in seminar.

597 Graduate Project: Special Education (3) S

Prerequisites: Educ 514 and consent of instructor. Individual research on an empirical project, with conferences with the adviser, culminating in a project.

598 Thesis: Special Education (3) S

Prerequisite: Educ 514 and consent of instructor. Individual research on an empirical problem, with conferences with advisers, culminating in a thesis.

779 Student Teaching With Mentally Retarded Pupils (4) S

Prerequisites: Educ 475 and concurrent enrollment in Educ 339 or 739 (for four units) or Educ 749 (for two units). Student teaching in a special class program for the educable or trainable mentally retarded at either the elementary or secondary level. (Elementary level: minimum of 30 hours a week in an elementary school; 2 hours per week in seminar. Secondary level: minimum of 15 hours a week in a secondary school; 2 hours per week in seminar.)

HEALTH EDUCATION

(Offered by the Department of Health Education, Physical Education, and Recreation)

HE 101 Personal and Community Health (2) F, S

Meaning and significance of physical, mental and social health as related to the individual and to society; alcohol and narcotics education; fire prevention; public safety and accident prevention.

HE 102 Prevention and First Aid (2) F, S

Study of the hazards in man's environment and the common accidents related thereto. Emphasis is placed upon both the care and prevention of accidents. Students will be certified in standard and advanced American Red Cross first aid procedures. (1 hour lecture, 2 hours activity)

HE 419 Environmental Health (3) F

Prerequisite: HE 101 or equivalent. The theoretical considerations of the complex relationship of the physical environment to preventive medicine and public health.

PHYSICAL EDUCATION

(Offered by the Department of Health Education,
Physical Education and Recreation)

GENERAL EDUCATION REQUIREMENT IN PHYSICAL EDUCATION

All students must successfully complete four semesters of physical education activity courses of one-half unit each to fulfill the general education requirement for the baccalaureate degree. Students on a normal schedule will be expected to complete this requirement during the freshman and sophomore year. Not more than six units of credit in physical education activities, including intercollegiate athletics courses, may be applied toward credit for graduation. Credit in intercollegiate athletics courses may not meet more than two semesters of the college general education requirement. Physical education activities courses may not be repeated for credit. Upper division students who have completed the general education requirement in physical education may elect additional activities.

EXEMPTIONS OR POSTPONEMENTS

Students 25 or older are exempted from the physical education requirement.*

The college physician may postpone the enrollment of a student in a physical education activity course.

Students unable to participate in the regular physical education program will be assigned to an adapted physical education class.

• FOR MEN

AQUATIC ACTIVITIES: (PE 110 Series)	GROUP AND TEAM ACTIVITIES: (PE 120 Series)	INDIVIDUAL ACTIVITIES: (PE 130 Series)	DANCE ACTIVITIES: (PE 140 Series)
	121m Team Sports F 122m Team Sports S	132m Combatives F, S 133m Physical Conditioning F, S	

• FOR WOMEN

	121w Team Sports F 122w Team Sports S	133w Physical Conditioning F, S	
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COEDUCATIONAL

111 Swimming F, S	123 Group Games (Open only to prospective elementary school teachers) F, S	130 Badminton F, S	141 Social Dance F, S
112 Intermediate Swimming F, S		131 Gymnastics & Tumbling F, S	142 Folk & Square Dance F, S
113 Lifesaving & Water Safety F, S		134 Adaptive Physical Education F, S	143 Modern Dance F, S
		135 Intermediate Tennis F, S	144 Intermediate Modern Dance F, S
		136 Archery F, S	149 Creative Movement & Dance F, S
		137 Golf F, S	
		138 Tennis F, S	
		139 Handball F, S	
		150 Intermediate Badminton F, S	
		151 Intermediate Gymnastics F, S	
		157 Intermediate Golf F, S	

* Interpretation: A student under 25 years of age at the time of admission to the college is required to take all four semesters of the requirement.

Physical Education

To assure a balanced program for each student, physical education activities are classified into four categories: (1) aquatic activities, (2) group and team activities, (3) dual and individual activities, and (4) dance activities. Students are counseled to complete no more than two courses from any given category.

COURSES IN INTERCOLLEGIATE ATHLETICS

Consent of the coach of the sport is required for enrollment. Each semester of enrollment carries one unit of credit. Credit in intercollegiate athletics courses may not meet more than two semesters of the college general education requirement in physical education. Not more than six units of credit in physical education activities, including intercollegiate athletics courses, may be applied toward credit for graduation. May be repeated for a maximum of six units.

PE 170A	Intercollegiate Sports for Women (Basketball)	(1)	S
PE 170B	Intercollegiate Sports for Women (Volleyball)	(1)	F
PE 181	Baseball	(1)	S
PE 182	Basketball	(1)	F
PE 183	Cross Country	(1)	F
PE 186	Golf	(1)	S
PE 187	Gymnastics	(1)	F
PE 192	Soccer	(1)	F
PE 193	Swimming	(1)	S
PE 194	Tennis	(1)	S
PE 195	Track and Field	(1)	S
PE 196	Water Polo	(1)	F
PE 197	Wrestling	(1)	S

PROFESSIONAL THEORY COURSES

PE 201 Introduction to Physical Education and Recreation (3) F

Introduction to physical education programs in public and private agencies, personal, social and professional requirements of the physical education teacher and recreation leader, includes the origin and development of the professions of health education, physical education and recreation with emphasis upon their significance and function in contemporary American culture.

PE 210 Water Safety Instructor (2) F

Prerequisite: PE 113 or equivalent and consent of the instructor. This course prepares the student to teach swimming and life saving and to supervise aquatic programs. Successful completion of this course will qualify the student for certification as an ARC Water Safety Instructor. Course cannot be used to satisfy a semester of the general education physical education requirement (1 hour lecture, 2 hours activity).

PE 214 Skin and SCUBA Diving (2) S

Prerequisite: PE 113 or equivalent and the consent of the instructor. The techniques of skin and SCUBA diving. Theory of diving, safety procedures, and applications of diving will be covered. (1 hour of lecture, 2 hours of activity). May be used to satisfy the fourth semester of the general education physical education activity requirement.

PE 311 Analysis of Aquatics (2) F

Prerequisites: PE 113 or equivalent and permission of the instructor. Analysis of diving, swimming, lifesaving including water safety procedures (1 hour lecture, 2 hours activity)

PE 312 Analysis of Combatives (2) S

Prerequisite: PE 132M Combatives or equivalent. Analysis of judo (jujitsu), wrestling and self-defense. (1 hour lecture, 2 hours activity)

PE 313 Analysis of Folk, Square and Social Dance (2) S

Prerequisite: PE 141, PE 142 or equivalent. Analysis of basic dance skills, international folk, square, round and social dancing. (1 hour lecture, 2 hours activity)

PE 314 Analysis of Individual and Dual Sports (2) F

Prerequisites: proficiency in skills covered and permission of the instructor. Analysis of archery, badminton, golf and tennis. (1 hour lecture, 2 hours activity)

PE 315 Analysis of Modern Dance (2) F

Prerequisites: PE 143, PE 144 or equivalent and permission of instructor. Analysis of modern dance including choreography, program planning and dance accompaniment. (1 hour lecture, 2 hours activity)

PE 317A Analysis of Team Sports (W) (2) F

Prerequisites: proficiency in the skills covered and permission of the instructor. Analysis of basketball, field hockey and soccer. (1 hour lecture, 2 hours activity)

PE 317B Analysis of Team Sports (W) (2) S

Prerequisites: proficiency in the skills of the sports covered and permission of the instructor. Analysis of speedball and speed-a-way, softball and volleyball. (1 hour lecture, 2 hours activity)

PE 318 Analysis of Team Sports (M) (2) F

Prerequisites: PE 121M, PE 122M or equivalent and permission of the instructor. Analysis of soccer, softball, speedball, and volleyball. (1 hour lecture, 2 hours activity)

PE 319 Analysis of Gymnastics and Tumbling (2) F

Prerequisites: PE 131M, PE 131W or equivalent and permission of the instructor. Analysis of apparatus gymnastics and tumbling. (1 hour lecture, 2 hours activity)

PE 320 Theory of Coaching Basketball (2) S

Prerequisites: proficiency in basketball and permission of the instructor. Analysis of skills, instructional procedures and coaching techniques necessary in coaching competitive basketball. (1 hour lecture, 2 hours activity)

PE 321 Theory of Coaching Baseball (2) S

Prerequisites: consent of the instructor and upper division standing. This course is designed to help prepare the student as a coach of baseball. Emphasis is on offensive and defensive coaching techniques as well as conditioning, budget preparation, purchase and care of equipment, scheduling, officiating, and design and care of facilities. (1 hour lecture, 2 hours activity)

PE 322 Theory of Coaching Track and Field (2) S

This course is designed to prepare students in the fundamental techniques of coaching track and field activities. (1 hour lecture, 2 hours activity).

PE 324 Theory and Principles of Human Motor Learning (3) F

Prerequisites: PE 201 and permission of the instructor. An analysis of current theories of motor learning as related to human performance. Philosophical bases are developed from which basic principles are evolved.

Recreation

PE 325 Case Studies in Human Motor Learning (3) S

Prerequisite: PE 324. Case studies involving human physical performance. Sequence of activities, individual needs, institutional patterns of organization and programming.

PE 333 Physical Education and Human Development (3) F, S

Prerequisite: Educ Found 311. Emphasis is placed upon characteristics of the child, particularly as these relate to physical growth and development; basic mechanical principles underlying efficient movement; and programs for physical needs of children in the elementary school.

PE 416 Kinesiology (3) F

Prerequisite: Bio 361 or equivalent. The study of human motion.

PE 417 Physiology of Exercise (3) F

Prerequisite: Bio 361 or equivalent. The study of physiological processes in physical activities and the effects of training upon performance.

PE 418 Adapted and Corrective Activities (3) S

Prerequisite: PE 416. The study and selection of activities and programs for students physically unable to participate in the regular physical education program.

PE 420 Tests and Measurements in Physical Education (3) S

A study of the development and use of tests and measurements in physical education in the evaluation of objectives, programs, and student achievement.

PE 442 Teaching Physical Education in the Secondary School (2) F

Prerequisite: Education 340, Education 311, admission to teacher education, senior standing or consent of the instructor. The student who has not had teaching experience must register concurrently in Education 449. See pages under Secondary Education for description of Standard Teaching Credential Program. Objectives, methods, and materials including audio-visual instruction for teaching physical education in secondary schools.

PE 552 Human Bio-Kinetics (3) F

Prerequisite: PE 416 or equivalent background in kinesiology and physiology. A study of advanced theories and a detailed analysis of human movement.

PE 749 Student Teaching in Physical Education in the Secondary School and Seminar (6) F, S

RECREATION

(Offered by the Department of Health Education,
Physical Education and Recreation)

Rec 203 Recreation Programs and Activities (2) S

Prerequisite: consent of the instructor. Theory and activity course, leadership in recreation programs, activities in recreation agencies. Laboratory experiences and practice included. (4 hours activity)

SCHOOL OF ENGINEERING

101 Introduction to Engineering and Computers (1) F

An introduction designed to familiarize the student with the nature, responsibilities and opportunities of the profession coupled with an introduction to computer programming.

102 Graphical Analysis (2) F

Prerequisite: one semester of high school graphics. Emphasizes graphical computation, vectors, nomography, representations and analysis of empirical data. (6 hours laboratory)

201 Mechanics (3) F

Prerequisites: Math 150B, Physics 221A. An introductory development of the fundamentals of statics with emphasis on application to strength of materials.

202 Properties of Engineering Materials (3) S

Prerequisites: Chem 101, Math 150A, Physics 221A. Applications of basic principles of physics and chemistry to the selection and use of engineering materials, with specific emphasis on mechanical behavior of metals and upon the electrical properties of semiconducting materials.

203 Electric Circuits (3) S

Prerequisites: Physics 221B, Math 250A. Analysis of electric and magnetic circuits, network theorems, polyphase circuits, introduction to electrical machinery.

203L Electric Circuits Lab (1) S

Prerequisite: Egr. 203 (may be taken concurrently. Laboratory applications of Egr. 203. (3 hours laboratory)

205 Digital Computation (2) S

Prerequisites: Egr. 101 or QM 264 and Math. 150A. Applications of the digital computer to elementary engineering problems.

402 Elements of Digital Computers (3) S (Offered in alternate years)

Prerequisite: Egr. 314. Introduction to digital computers, Boolean algebra, switching networks, input-output devices, analog-digital conversion, arithmetic and control units.

402L Digital Techniques Laboratory (1) S (Offered in alternate years)

Corequisite: Egr. 402. Experimental study of digital logic and switching circuits. (3 hours laboratory)

403 Computer Methods in Numerical Analysis (3) F, S

Prerequisite: Egr. 312. The use of digital computers in the solution of algebraic, transcendental, simultaneous, ordinary and partial differential equations.

404 Analog Computation (2) S (Offered in alternate years)

Prerequisite: Egr. 303, 312. Basic analog computer elements, programming, the solution of linear and nonlinear problems, transfer function generation, simulation.

404L Analog Computation Laboratory (1) S (Offered in alternate years)

Corequisite: Egr. 404. Experimental study of linear and nonlinear problems using an analog computer. Simulation studies of physical systems. (3 hours laboratory)

Engineering

410 Intermediate Dynamics (3) F (Offered in alternate years)

Prerequisite: Egr. 312. Kinematics and dynamics of particles and rigid bodies, motion in potential fields, Lagrange's equations.

412 Theory of Elasticity (3) S (Offered in alternate years)

Prerequisite: Egr. 301, 308. The differential equations which govern the behavior of an elastic solid, and their applications to a variety of problems in two and three dimensions using various coordinate systems.

416 Feedback Control Systems (3) F (Offered in alternate years)

Prerequisite: Egr. 312. Formulation of transfer functions, block diagrams and signal flow graphs, open-loop and closed-loop frequency response, root locus methods, consideration of stability and steady-state errors.

423 Engineering Probability and Statistics (3) S (Offered in alternate years)

Prerequisite: Egr. 308. Engineering problems involving discrete and continuous random variables, distribution and density functions, Bayes theorem, parameter estimation, statistical inference.

434 Direct Energy Conversion (3) S (Offered in alternate years)

Prerequisite: Egr. 203, 304, 305. The direct conversion of heat to electrical energy, thermoelectric, thermionic and magnetohydrodynamic devices, solar and fuel cells.

455 Solid-state Electronics (3) F

Prerequisite: Egr. 314. Semiconductor properties and the physical principles and theory underlying the operation of semiconductor devices; characteristics and approximate models for circuit analysis.

501 Microwave Techniques (3) F (Offered alternate years)

Prerequisite: Egr. 419. Application of network theory to behavior of microwave waveguiding structures, passive microwave devices, masers and parametric amplifiers.

502 State-space Theory of Control and Systems (3) S

Prerequisite: Egr. 416. State-space theory of control and systems, stability analysis and control system design using state-variable theory, introduction to optimal control problems and Pontryagin's maximum principle.

503 Information Theory and Coding (3) S

Prerequisite: Math. 335A or Egr. 423. Information measures, probabilistic studies of the transmission and encoding of information, Shannon's fundamental theorems, coding for noisy channels.

504 Linear Network Synthesis (3) F

Prerequisite: Egr. 313. Generalized analysis methods of passive networks, modern synthesis procedures for realizing driving-point and transfer-functions, approximation methods in filter design.

506 Digital Computer Systems (3) S (Offered alternate years)

Prerequisite: Egr. 402. The organization and logical design of digital data processing systems for computation, information processing, and control.

507 Statistical Communication Theory (3) S

Prerequisite: Egr. 503. Characterization of random signals and processes, transmission of random signals through linear systems, noise considerations, detection theory, optimum receivers.

508 Intermediate Fluid Mechanics (3) F (Offered alternate years)

Prerequisite: Egr. 415. Basic equations of fluid dynamics, Navier-Stokes equations, similarity parameters, inviscid fluids, potential flow.

511 Advanced Dynamics (3) S (Offered alternate years)

Prerequisite: Egr. 410. The dynamics of particles and rigid bodies by the use of the formulations of the laws of mechanics due to Newton, Euler, Lagrange and Hamilton; applications.

512 Gyrodynamics (3) F (Offered alternate years)

Prerequisite: Egr. 410. Frames of reference, Eulerian angles, spinning disks and rotors, gravity effects, gyroscopes, control of forced and free vibrations.

518 Advanced Fluid Mechanics (3) S (Offered alternate years)

Prerequisite: Egr. 508. Viscous flow, Couette and Poiseuille flow, introduction to turbulence and boundary layer theory.

524 Advanced Thermodynamics (3) F (Offered alternate years)

Prerequisite: Egr. 316. Equilibrium and stability criteria, chemical thermodynamics, multiple reaction systems, ionization, equilibrium composition.

530 Advanced Strength of Materials (3) F (Offered alternate years)

Prerequisite: Egr. 301. Castigliano's theorem, principle of virtual work, applications to cylinders, shrink fits, curved beams, elastic and inelastic buckling of columns.

535 Numerical Methods (3) S

Prerequisite: Egr. 403. Introduction to the theory of errors, difference operators, summation procedures, polynomial approximations and Gaussian quadrature.

555 Applied Electromagnetic Theory (3) S (Offered alternate years)

Prerequisite: Egr. 419. Dynamic electromagnetic field theory; solution of vector boundary value problems with applications to guided waves, cavities, and antennas.

557 Sampled-data Systems (3) F (Offered alternate years)

Prerequisite: Egr. 416. Compensation techniques for linear control systems, analysis of sampled-data and digital control systems, Z-transforms, consideration of stability.

559 Active Network Synthesis (3) S (Offered alternate years)

Prerequisite: Egr. 504. Analysis and design of linear active circuits based on pole-zero concepts; synthesis of active networks with controlled sources, negative emittance converters, operational amplifiers.

569 Orbital Mechanics (3) S (Offered alternate years)

Prerequisite: Egr. 410. The two-body problem, geometry of orbits, transfers, perturbation, stability and oscillations, rendezvous.

573 Aerospace Guidance Systems (3) S (Offered alternate years)

Prerequisite: Egr. 512. Rate and integrating gyros, accelerometers, stabilized platforms, gimbal servos, principles of inertial navigation systems.

575 Kinetic Theory and Statistical Thermodynamics (3) S (Offered alternate years)

Prerequisite: Egr. 524. Statistical study of ideal gases, kinetic theory, statistical mechanics, electron gas, thermionic emission, photon and phonon gases.

Engineering

577 Stress Analysis (3) S (Offered alternate years)

Prerequisite: Egr. 421. Analysis of stresses and strains in structural members and machine elements under static and dynamic loads, analytical and experimental techniques.

581A Systems Engineering Methodology (3) F

Prerequisite: graduate standing in engineering. The systems engineering process, the energy-materials-information interdependency, modeling and simulation and the functions of computing.

581B Systems Engineering Methodology (3) S

Prerequisite: Egr. 581A. Large-scale systems; the basic concepts of signals, noise and information; optimization methods and applications thereof.

585 Systems Engineering Mathematical Tools (3) F

Prerequisite: Math. 335A or Egr. 423 and Fourier and Laplace transforms. Metric and linear space theory, transformations, linear functionals, optimization techniques, linear programming.

587 Operational Analysis Techniques in Systems Engineering (3) S

Prerequisite: Math. 335A or Egr. 423. Operational research models; applications of probability theory to reliability, quality control, waiting line theory, Markov chains; Monte Carlo methods.

591 Analytical Methods in Engineering (1-6) F, S

Prerequisite: graduate standing and consent of the instructor. Application of advanced analytical methods in the solution of complicated problems in civil, electrical and mechanical engineering.

597 Graduate Projects (1-6) F, S

Prerequisite: permission of adviser.

598 Thesis (1-6) F, S

Prerequisite: permission of adviser.

FACULTY AND ADMINISTRATION

1966-67

(Year in parentheses indicates date of appointment)

- LANGSDORF, WILLIAM B. (1959), President and Professor of History
B.A., M.A., Occidental College; Ph.D., University of California
- ABRAHAM, JOHN A. (1965), Associate Professor of English
Ph.B., Marquette University; M.A., Ph.D., University of Wisconsin
- *ADAMS, PHILLIP A. (1963), Associate Professor of Biology
B.S., University of California; M.A., Ph.D., Harvard University
- ADAMS, RAYMOND V. (1960), Professor of Physics and Chairman, Physics Department
B.S., Kansas State University; Ph.D., California Institute of Technology
- ALAMSHAH, WILLIAM H. (1959), Professor of Philosophy and Chairman, Philosophy Department
M.A., Claremont Graduate School; Ph.D., University of Southern California
- ALBRECHT, EDNA L. (1966), Assistant Professor of Physical Education
B.A., M.Ed., Whittier College
- ALEXANDER, JAMES P. (1960), Associate Professor of Communication
B.A., M.S., University of Southern California
- ALLEN, HOLLIS P. (1960), Professor of Education and Coordinator of Graduate Studies
Emeritus since 1965
B.A., Pomona College; M.A., Ed.D., Stanford University; LL.D., Claremont Graduate School
- AMES, DENNIS B. (1960), Professor of Mathematics and Chairman, Mathematics Department
B.A., M.A., Bishop's University; Ph.D., Yale University
- ANDERSEN, MARTIN P. (1965), Professor of Speech
B.A., M.A., Ph.D., University of Wisconsin
- ARANA, OSWALDO (1965), Associate Professor of Spanish
B.A., Texas Christian University; M.A., Ph.D., University of Colorado
- ASHLEY, THOMAS J. (1961), Associate Professor of Political Science
B.A., Fresno State College; Ph.D., Claremont Graduate School
- AUSTIN, DON D. (1963), Assistant Professor of English
B.A., M.A., University of Redlands; Ph.D., University of Washington
- BABCOCK, RICHARD D. (1966), Assistant Professor of Management
B.S., Indiana University; M.S., Arizona State University
- †BAILLIE, ALLAN S. (1965), Assistant Professor of Management
B.Sc., B.S.M.E., Ohio University; M.B.A., University of Washington
- BARISH, NATALIE (1966), Associate Professor of Biology
A.B., Goucher College; M.A., Indiana University; Ph.D., Ohio State University
- BARRES, STEPHEN J. (1961), Professor of Labor Relations and Management and Chairman,
Management Department
B.A., Texas Western College; M.S., Ph.D., Purdue University
- BARRETT, JEAN A. (1963), Associate Professor of Physical Education
B.S., Cortland State Teachers; Ed.M., Ed.D., University of Buffalo
- BATES, MARILYN M. (1966), Assistant Professor of Education
B.A., M.A., California State College at Long Beach
- BEATON, C. RUSSELL (1964), Assistant Professor of Quantitative Methods
B.A., Willamette University
- BECK, WARREN A. (1961), Professor of History
B.A., M.A., Wayne University; Ph.D., Ohio State University
- BECKER, ERNEST A. (1959), Dean of Students and Professor of Philosophy
B.A., Amherst College; B.D., Hartford Theological Seminary; M.A., Ed.D., University of Southern California
- *BELL, CHARLES G. (1964), Assistant Professor of Political Science
B.A., Pomona College; M.A., Ph.D., University of Southern California

* On leave spring 1967.

† On leave fall 1966.

Faculty and Administration

- BELLOT, LELAND J. (1964), Assistant Professor of History
B.A., Lamar State College; M.A., Rice Institute
- BENSON, RUSSELL V. (1965), Associate Professor of Mathematics
B.E.E., Cornell University; M.A., Ph.D., University of Southern California
- BIGELOW, RALPH (1966), Associate Dean of Students, Director of Admissions and Records,
and Associate Professor
B.Mus., M.Mus., University of Rochester
- BLANCHARD, MILTON C. (1961), Building Coordinator
B.S., M.Ed., Tufts University
- BLEND, HARVEY (1963), Professor of Physics
B.S., University of Texas; M.S., Ph.D., University of California, Los Angeles
- BOARINO, GERALD L. (1965), Assistant Professor of Spanish
B.A., M.A., Ph.D., University of California
- BRADLEY, BETTY (1966), Student Activities Adviser
B.A., San Diego State College
- BRADSHAW, L. JACK (1965), Associate Professor of Biology
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- O'TOOLE, JOHN B. (1962), Associate Professor of Mathematics
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- OVERVOLD, GARY E. (1966), Assistant Professor of Philosophy
B.A., St. Olaf College; Ph.D., Claremont Graduate School
- PALISI, BARTOLOMEO J. (1963), Assistant Professor of Sociology
B.A., M.A., Brooklyn College; Ph.D., University of Nebraska
- *PAN, DOROTHY (1964), Assistant Professor of Chemistry
B.S., University of Oklahoma; M.S., University of Minnesota; Ph.D., Case Institute of Technology
- PARTIN, ROBERT E. (1966), Professor of Art
B.A., University of California at Los Angeles; M.F.A., Columbia University
- PASTOR, PAUL J. (1960), Professor of Physical Education
B.S., M.Ed., Springfield College; Ed.D., University of Oregon
- PENA, ERVIE (1963), Instructor in Spanish
B.A., Mexico City College; M.A., University of Southern California
- PETALAS, URANIA C. (1965), Assistant Professor of English
B.A., M.A., San Fernando Valley State College
- PHILLIPS, DORIS G. (1965), Associate Professor of Economics
B.A., Ph.D., University of California
- PICKERSGILL, JOYCE E. (1966), Assistant Professor of Economics
B.A., Smith College; M.A., Ph.D., University of Washington
- PIVAR, DAVID J. (1965), Assistant Professor of History
B.S., Millersville State College; M.A., Temple University; Ph.D., University of Pennsylvania
- PONTNEY, JACK A. (1961), Associate Dean, School of Business Administration and Economics, and Associate Professor of Economics
B.A., University of Redlands; M.A., Ph.D., Northwestern University
- POORKAJ, HOUSHANG (1965), Assistant Professor of Sociology
B.A., M.A., University of Southern California
- POVLOVICH, CHARLES A. (1960), Associate Dean, School of Letters, Arts, and Science, and Professor of History
B.A., University of Kansas City; M.A., University of Missouri; Ph.D., University of Southern California
- PRANGE, W. WERNER (1965), Professor of German, and Assistant to the President
B.A., Paedagogium, Bad Godesberg; Ph.D., University of Bonn
- PREBLE, KENNETH J., JR. (1963), Associate Professor of Education
B.A., University of Miami; M.A., Ph.D., University of Chicago
- PRENZLOW, CARL F. (1965), Assistant Professor of Chemistry
B.A., University of Colorado; Ph.D., University of Washington

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Faculty and Administration

- PUTNAM, JACKSON K. (1965), Assistant Professor of History
B.S., M.A., University of North Dakota; Ph.D., Stanford University
- QUALLS, CLIFFORD R. (1964), Instructor in Mathematics
B.A., Long Beach State College; M.A., University of California, Riverside
- RACSTER, MARY L. (1966), Assistant Professor of Finance
A.B., Ohio University; A.M., University of Illinois
- RAMSAY, ORRINGTON C. (1960), Professor of English, Chairman, English Department
B.S., Northwestern University; M.A., Ph.D., University of Wisconsin
- RANSFORD, H. EDWARD (1966), Assistant Professor of Sociology
B.A., Occidental College; M.A., Ph.D., University of California at Los Angeles
- REIMS, CLIFFORD W. (1966), Assistant Professor of Music
A.B., Bucknell University; M.M., Indiana University
- REITH, GERTRUDE M. (1961), Associate Professor of Geography
B.A., M.A., University of Washington; Ph.D., Clark University
- REMSEN, LESTER E. (1966), Assistant Professor of Music
B.M., Eastman School of Music; M.M., D.M.A., University of Southern California
- RETAN, E. ELIZABETH (1966), Librarian III
B.A., Pomona College; B.S.L.S., Columbia University
- RICHARDSON, IVAN L. (1964), Professor of Political Science and Chairman, Political Science Department
B.A., University of Illinois; M.A., Ph.D., University of Iowa
- RILEY, GLYNDON D. (1966), Assistant Professor of Speech
B.A., M.A., Pepperdine College; Ph.D., Florida State University
- ROBERTS, CECIL E. (1963), Librarian III
B.A., M.A., University of Iowa; M.L.S., University of Illinois
- ROBERTS, FRANK L. (1961), Professor of Management and Marketing and Chairman, Marketing Department
B.S., University of Arkansas; M.B.A., University of Texas; Ph.D., University of Illinois
- ROTHMAN, ALVIN H. (1964), Associate Professor of Biology
B.A., M.A., University of California, Los Angeles; D.Sc., The Johns Hopkins University
- RUBINSTEIN, WILLIAM C. (1966), Associate Professor of English
B.A., College City of New York; M.A., New York University; Ph.D., Yale University
- RUSSELL, JACK (1966), Counselor and Test Officer
B.A., Pepperdine College; M.S., University of Southern California
- RUTEMILLER, BESSIE M. (1966), Librarian II
B.A., Baldwin-Wallace College; M.S. in L.S., Western Reserve University
- RUTEMILLER, HERBERT C. (1966), Associate Professor of Quantitative Methods and Acting Chairman, Quantitative Methods Department
B.S., Case Institute of Technology; M.S., Ph.D., Western Reserve University
- SAILOR, DANTON B. (1962), Associate Professor of History
B.A., M.A., Ph.D., University of Illinois
- SALZ, P. JUNE (1961), Associate Professor of English
B.A., M.A., Ph.D., University of Southern California
- SAMUELSON, GERALD D. (1962), Associate Professor of Art
B.A., M.A., University of California, Los Angeles
- SANDBERG, ROLLIN T. (1964), Associate Professor of Mathematics
B.A., Alfred University; M.A., University of Buffalo; Ph.D., University of Arizona
- SASTRY, RAMA M. V. (1965), Assistant Professor of Quantitative Methods
B.A., Andhra University, India; M.A., Gujarat University; Ph.D., Iowa State University
- SCHICK, GUY A. (1964), Assistant Professor of Economics
B.S., M.S., Purdue University
- SCHILD, RICHARD J. (1965), Assistant Professor of Physical Education
B.S., M.S., Wisconsin State University
- SCHMIDT, LOUIS G. (1961), Professor of Psychology
B.S., Stout State College; M.S., Ph.D., University of Wisconsin
- SCHNEIDER, CLARENCE E. (1962), Professor of English
B.A., Iowa State Teachers College; M.A., University of Iowa; Ph.D., University of Southern California
- SCHON, MICHAEL P. (1966), Lecturer in Speech
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- SCHULTZ, DEANNA L. (1965), Assistant Professor of Physical Education
B.S., University of California at Los Angeles; M.P.H., University of Florida
- SCOTT, MILDRED H. (1965), Registrar
B.A., University of California
- SCOTT SARI, E. (1963), Assistant Professor of English
B.S., Carnegie Institute of Technology; M.Litt., University of Pittsburgh; Ph.D., University of Iowa
- SCOUFOS, ALICE L. (1966), Assistant Professor of English
B.A., Ph.D., University of Oklahoma
- SEE, RICHARD E. (1966), Assistant Professor of Anthropology
B.A., M.A., Ph.D., University of California at Los Angeles
- SELLER, HOWARD J., Assistant Professor of English
B.A., University of California, Los Angeles; M.A., Ph.D., University of Southern California
- SHAPIRO, SHIRLEY (1965), Instructor in English
B.A., Brooklyn College; M.A., University of Washington
- SHAPLEY, CHARLES S. (1962), Associate Professor of French
B.A., M.A., Ph.D., University of California
- SHARMA, RADHA MOHAN (1966), Assistant Professor of Finance
B.S., M.B.A., Florida State University
- SHARMA, SOM PARKASH (1966), Assistant Professor of English
B.A., B.M., College of Simla; M.A., Punjab University; Ph.D., University of Wisconsin
- SHAUL, DONALD R. (1964), Associate Professor of Management
B.S., United States Naval Academy; M.B.A., Ph.D., University of California, Los Angeles
- SHIELDS, LORAN D. (1963), Associate Professor of Chemistry
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- SICA, MORRIS G. (1964), Associate Professor of Education
B.A., Brooklyn College; M.A., University of Michigan; Ed.D., Florida State University
- SIEGFRIED, CLAUDE L. (1965), Lecturer in French
Lic en Droit, University of Paris
- SILVERS, STUART (1965), Assistant Professor of Philosophy
B.A., M.A., Michigan State University; Ph.D., University of Pittsburgh
- SMITH, ALDEN W. (1964), Associate Professor of Education
B.A., M.A., University of California; M.A., Ph.D., Columbia University
- SMITH, EDWARD W. (1964), Director of Development
B.S., University of Michigan; M.S., University of Southern California
- SMITH, J. REX (1961), Associate Professor of Sociology
B.A., Phillips University; B.D., Yale University, Divinity School; M.A., Ph.D., University of Southern California
- *SMITH, THEODORE H. (1960), Professor of Finance and Marketing
B.A., Heidelberg College; M.B.A., Northwestern University; Ph.D., Ohio State University
- SMITH, VICTOR V. (1962), Associate Professor of Art
B.A., M.A., Long Beach State College
- SMYTHE, TED C. (1963), Assistant Professor of Communication
B.S., Sterling College; M.S., University of Oregon
- SOMMER, MICHAEL H. (1965), Assistant Professor of Communication
B.A., University of California; M.S., University of California at Los Angeles
- SPANGLER, GEORGE M. (1966), Assistant Professor of English
A.B., Haverford College; M.A., Ph.D., University of California
- SPENGER, ROBERT E. (1964), Assistant Professor of Chemistry
B.A., University of California; Ph.D., University of California, Los Angeles
- STARK, SHIRL A. (1966), Assistant Professor of Education
A.B., California State College at Los Angeles; M.S., University of Southern California
- STIEL, BETH T. (1966), Librarian II
B.A., University of California at Los Angeles; M.L.S., University of California
- STIEL, EDSEL F. (1962), Associate Professor of Mathematics
B.A., M.A., Ph.D., University of California, Los Angeles
- STIER, DUDLEY A. (1966), Housing Coordinator
A.B., Stanford University; M.B.A., Cornell University
- STOVALL, EULA M. (1965), Assistant Professor of Physical Education
B.A., Colorado State College of Education; M.A., San Francisco State College; Ph.D., University of Southern California

* On leave 1966-67.

Faculty and Administration

- SULLIVAN, JAMES E. (1965), Instructor in Art
B.A., M.A., University of California, Los Angeles
- SULLIVAN, PHILIP E. (1966), Assistant Professor of English
A.B., St. Mary's College; M.A., University of California; Ph.D., University of Southern California
- SUTTON, DONALD D. (1960), Professor of Biology and Acting Chairman, Biological Science Department
B.A., University of California; M.A., Ph.D., University of California, Davis
- SUTTON, IMRE (1964), Assistant Professor of Geography
B.A., M.A., University of California, Los Angeles; Ph.D., University of California, Los Angeles
- TEEL, ERIC A. (1966), Librarian II
B.A., St. John's College, Annapolis; M.S. in L.S., Western Reserve University
- THOMPSON, CECIL B. (1965), Assistant Professor of Economics
B.A., M.A., University of California at Los Angeles
- THORSEN, DAVID O. (1960), Professor of Music
B.Mus., University of Redlands; M.A., Occidental College
- TOWNSHEND-ZELLNER, NORMAN (1964), Professor of Economics and Chairman, Economics Department
B.S., Ph.D., University of California
- TOY, ERNEST W., JR. (1959), College Librarian and Associate Professor of History
B.A., College of St. Thomas; M.S., University of Southern California; M.A., University of California, Los Angeles
- TREGO, JOHN W. (1964), Associate Professor of Management and Business Education
B.A., Lebanon Valley College; M.A., Columbia University; Ed.D., Temple University
- * TSAI, LOH SENG (1965), Professor of Psychology
B.A., Nanking University; M.S., Fuh Tan University; Ph.D., University of Chicago
- TULL, DONALD S. (1961), Dean, School of Business Administration and Economics, Professor of Quantitative Methods, Economics and Marketing
B.S., M.B.A., Ph.D., University of Chicago
- TUMAS, ELENA V. (1965), Assistant Professor of English
B.A., Immaculate Heart College; M.A., Ph.D., University of Southern California
- TURNER, GEORGE C. (1960), Associate Professor of Biology and Science Education and Chairman, Science and Mathematics Education Department
B.A., Stanford University; M.S., Utah State University; M.Ed., Eastern Washington College of Education; Ed.D., Arizona State University
- TUSSING, MARJORIE O. (1965), Instructor in German
B.A., Whittier College; M.A., Middlebury
- UNTERBERGER, BETTY M. (1961), Professor of History
B.A., Syracuse University; M.A., Radcliffe-Harvard; Ph.D., Duke University
- UNTEREINER, WAYNE W. (1964), Professor of Anthropology and Chairman, Anthropology Department
B.A., University of California; M.A., Ph.D., Harvard University
- VALPEY, ROBERT G. (1965), Dean, School of Engineering and Professor of Engineering
B.S., United States Military Academy; B.M.E., Cornell University; M.S., University of Colorado; Ph.D., University of Illinois
- VAN CLEAVE, R. HAROLD (1965), Director of Extension and Coordinator of Summer Session and Evening Classes
B.S., M.S., Indiana State University
- VAN DEVENTER, DAVID E. (1965), Assistant Professor of History
B.A., Baldwin-Wallace College; M.A., Western Reserve University
- VAN GINNEKEN, EVA (1964), Assistant Professor of French
B.A., M.A., Wayne University; Ph.D., Brown University
- VAUGHAN, RODGER D. (1965), Assistant Professor of Music
B.Mus., University of Kansas at Lawrence; M.Mus., University of Kansas at Wichita
- VERTINSKY, ILAN B. (1966), Assistant Professor of Quantitative Methods
B.A., 1964, the Hebrew University; M.A., University of California
- † VINOD, HRISHIKESH D. (1965), Assistant Professor of Economics
B.Com., B.M., College of Commerce, Poona, India; M.A., Delhi School of Economics

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† On leave 1966-67.

Faculty and Administration

- VOYADJIS, THEODORE A. (1966), Assistant Professor of Economics
B.A., 1960, Brandeis University; M.A., University of Buffalo
- WAGNER, DIANE T. (1966), Assistant Professor of Biology
B.S., University of Florida; M.A., Ph.D., Duke University
- WAGNER, M. JOHN (1964), Associate Professor of English and Acting Chairman, English Department¹
B.A., M.A., University of Chicago; Ph.D., Northwestern University
- WALKINGTON, DAVID L. (1963), Assistant Professor of Biology
B.A., M.S., Arizona State University; Ph.D., Claremont Graduate School
- WATKIN, LAWRENCE E. (1965), Professor of English
B.A., Syracuse University; M.A., Harvard University
- WELEBA, SHIRLEY ANN (1966), Assistant Professor of History
B.Mus., University of Southern California
- WEYMAN, BRADLEY S. (1965), Placement Supervisor
B.A., M.A., San Francisco State College
- WILCOX, HERBERT G. (1966), Assistant Professor of Political Science
B.A., Reed College; M.A., Yale University; Ph.D., New York University Graduate School of Public Administration
- WILEY, EDGAR A. (1966), Assistant Professor of Management
B.A., Claremont Men's College; M.S., Claremont Graduate School
- WISEMAN, DORSEY E. (1961), Professor of Accounting and Finance and Chairman, Accounting and Finance Department
B.S., West Virginia University; M.B.A., University of Pennsylvania; Ph.D., University of Illinois; C.P.A.
- WITCHEY, RONALD L. (1965), Instructor in Physical Education
B.A., Denison University; M.Ed., Bowling Green State University
- WOO, JOHN C. H. (1962), Associate Professor of Accounting
B.A., National University, Nanking, China; M.A., San Francisco State College; M.A., Ph.D., University of California
- WORKS, ERNEST (1964), Associate Professor of Sociology
B.A., Arkansas A.M. & N. College; M.A., Ph.D., University of Illinois
- WU, KINGSLEY K. (1966), Assistant Professor of Art
B.A., University of Washington; M.F.A., Pratt Institute
- YESSIS, MICHAEL (1966), Assistant Professor of Physical Education
B.S., M.A., City College of New York; Ph.D., University of Southern California
- YINGER, JON A. (1966), Assistant Professor of Political Science
B.A., Whittier College; M.A., Ph.D., Claremont Graduate School
- YOUNG, JAMES D. (1960), Professor of Drama and Chairman, Drama Department
B.S., Pepperdine College; M.A., Ph.D., University of Southern California
- ZELTZER, ALLEN M. (1963), Associate Professor of Drama
B.A., M.A., Ph.D., Wayne State University
- ZIMMERMAN, JON E. (1966), Assistant Professor of German
B.S., University of Wisconsin; M.A., University of Colorado

¹ Spring 1967 semester.

PART-TIME FACULTY

1966-67

- ASH, EDWARD C. (1962), Lecturer in Management
B.S., M.B.A., University of Southern California
- AUSTIN, JACKSON J. (1965), Lecturer in Education
B.S., M.S., Kansas State Teachers College
- BARKER, SHIRLEY (1966), Lecturer in Psychology
BsMe., University of Arizona; M.A., California State College at Long Beach
- BARNES, JEAN (1966), Lecturer in Music
B.A., Pomona College
- BARSTOW, VERA (1966), Lecturer in Music
- BAUMGARDNER, LEONA M. (1966), Lecturer in Education
B.S., Miami University, Ohio
- BAWDEN, WILLIAM O. (1967), Lecturer in Science and Mathematics Education
B.A., University of Southern California
- BECKMAN, WALTER F. (1966), Lecturer in Education
B.A., Northern Illinois State College; M.A., Northwestern University
- BENGSTON, KURT L. (1963), Lecturer in Physics
B.S., M.A., Wayne State University
- BERGEL, KURT (1966), Lecturer in Foreign Languages
M.A., University of Frankfurt; Ph.D., University of California, Berkeley
- BERTHA, BRIAN A. (1965), Lecturer in Finance
B.S., University of Illinois; M.B.A., University of California at Berkeley
- BLANK, VERNON (1966), Lecturer in Science and Mathematics Education
B.S., Iowa State College; M.S., Western Illinois University
- BLOCH, KALMAN (1966), Lecturer in Music
- BOND, THOMAS G. (1964), Lecturer in Marketing
B.A., University of Colorado; M.B.A., Arizona State University
- BORST, PHILIP W. (1967), Lecturer in Political Science
B.A., M.A., Stanford University
- BRADY, MELVIN (1963), Lecturer in Marketing
B.S., University of Utah; M.B.A., University of Southern California
- BRUNIG, HELEN (1966), Lecturer in Art
B.A., University of Denver
- BUNCH, LARRY L. (1964), Graduate Assistant of Philosophy
B.A., California State College at Fullerton
- CAMPO, FRANK (1966), Lecturer in Music
B.M., M.M., University of Southern California
- CANNON, JOHN P. (1962), Lecturer in Geography
B.A., California State College at Long Beach; M.A., Mexico City College; Ph.D., University of Mexico
- CANNON, MARGARET (1966), Lecturer in Art
- CAPDEVIELLE, MARY K. (1966), Graduate Assistant in Political Science
B.A., Newcomb College—Tulane University
- CARLSON, ANDREW H. (1966), Graduate Assistant in Music
B.A., California State College at Fullerton
- CARTER, JOSEPH L. (1966), Lecturer in Science and Mathematics Education
B.S., University of Kansas
- CASH, GORDON (1966), Lecturer in Mathematics
B.S., M.S., University of Illinois
- CATHEY, WADE T., JR. (1967), Lecturer in Engineering
B.S., M.S., University of South Carolina; Ph.D., Yale University
- CAUDILL, MARIANNE, (1966), Lecturer in Music
B.M., University of Southern California
- CHEADLE, JANE B. (1966), Lecturer in Mathematics
B.A., Mills College; M.A., University of Wisconsin

- CHETRON, MARTIN R. (1965), Lecturer in Management
B.S., Massachusetts Institute of Technology; M.B.A., University of Southern California
- CINCUSH, LAWRENCE (1966), Assistant in Art
B.A., California State College at Fullerton
- CONRAD, GLADYS K. (1965), Lecturer in Education
B.S., Washington University; M.A., M.D., University of Wisconsin
- CORDES, ROBERT (1966), Graduate Assistant in Music
B.A., California State College at Fullerton
- COURTER, GENE W. (1966), Lecturer in Speech
B.S., Central Michigan University; M.A., University of Michigan
- COX, MIRIAM (1961), Lecturer in English
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- CUNNINGHAM, GEORGE E. (1966), Lecturer in Science and Mathematics Education
B.A., Whittier College; M.A., Long Beach State College
- DASTYCK, RICHARD D. (1966), Lecturer in Geography
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- DAVIS, ROBERT D. (1966), Lecturer in Science and Mathematics Education
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- DEMES, STANLEY B. (1964), Librarian II
B.A., University of California, Santa Barbara; A.M., Washington University; M.S. in L.S., University of Southern California
- DISRUUD, SHELDON (1966), Lecturer in Music
B.M., University of Southern California
- DOLSTRA, JAN R. (1966), Assistant in Physical Education
- DONNELLY, SR. GERTRUDE JOSEPH, CSJ (1966), Lecturer in English
A.B., Dominican College; M.A., Ph.D., Catholic University of America
- DRUGG, WARREN (1966), Lecturer in Biology
B.S., M.S., University of Washington; Ph.D., Claremont Graduate School
- D'URSO, DANIEL (1966), Graduate Assistant in Marketing and Quantitative Methods
B.A., California State College at Fullerton
- EELS, MURRAY (1965), Graduate Assistant of Biology
B.S., California State Polytechnic College
- ELLIOTT, JOHN (1966), Lecturer in Economics
B.A., Occidental College; M.A., Ph.D., Harvard University
- FELDMAN, SUSAN (1966), Lecturer in Mathematics
A.B., University of California, Los Angeles; M.A.T., Indiana University
- FISHER, JOEL M. (1966), Lecturer of Political Science
B.S., University of Southern California; M.A., University of California at Berkeley
- FITCH, ROBERT J. (1966), Lecturer in Psychology
B.A., M.A., California State College at Los Angeles
- FORLEY, MAURICE (1962), Lecturer in Speech
Ph.B., Yale College; J.D., Northwestern Law School
- FOSTER, WILLIAM W. (1966), Lecturer in Music
B.M., Chicago Conservatory; M.S., University of Southern California
- FULLER, MARJORIE G. (1967), Lecturer in English
A.B., University of Michigan; M.A., California State College at Fullerton
- GRANT, WILLIAM E. (1965), Lecturer in Management
B.S., University of Denver; M.S., California State College at Long Beach
- GRUBB, ED (1966), Lecturer in Accounting
- GUSSOW, MARGARET B. (1962), Librarian II
B.A., Queen's University; M.S.C. in L.S., University of Southern California
- HAMILTON, KENNETH (1965), Graduate Assistant of Biology
B.S., Bates College
- HARRIS, RALPHE W. (1963), Lecturer in Sociology
B.S., University of Louisville; M.S., Kent School of Social Work
- HATFIELD, DOROTHY (1967), Lecturer in English
B.A., M.A., California State College at Fullerton
- HAVEN, DAVID F. (1964), Graduate Assistant of Biology
B.A., University of Redlands
- HAYTHORNE, KARYL (1966), Lecturer in Drama
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Part-time Faculty

- HECKMAN, WILLIAM O. (1964), Lecturer in English
B.A., Rutgers University; M.A., Columbia University
- HEINZE, EMIL (1966), Graduate Assistant in Biology
B.A., California State College at Fullerton
- HEMATIN, RAYMOND G. (1965), Lecturer of Business Statistics
B.S., Florida State University
- HINTON HEATHER (1967), Lecturer in Political Science
B.A., University of Southern California; M.A., Harvard University
- HOLDEN, DANIEL W. (1962), Assistant Professor of Management
B.S., University of California; LL.B., Loyola University
- HUDDLE, FRANKLIN P. (1966), Lecturer in Political Science
B.F.A., University of Arizona; M.A., Ph.D., American University
- HUNTINGTON, JOHN (1965), Lecturer in Art
B.A., M.A., University of California at Los Angeles
- JACKSON, RUTH (1966), Assistant in Speech
B.A., University of Redlands
- JAMISON, JANET (1966), Graduate Assistant in Biology
B.S., California State Polytechnic
- JOHN, RANDY W. (1966), Graduate Assistant in Psychology
B.A., California State College at Fullerton
- JONES, WILLIAM A. (1967), Graduate Assistant in Quantitative Methods
B.A., Fresno State College
- JOY, ROBERT (1966), Graduate Assistant in Accounting and Finance
B.A., California State College at Fullerton
- KEITH, JOHN (1966), Lecturer in Music
B.S., University of Illinois; M.S., Northwestern University
- KEMALYAN, STEVEN (1966), Lecturer in Music
- KESLER, SUAD WAKIM (1966), Lecturer in Education
B.S., Ph.D., Cornell University; M.A., American University of Beirut
- KING, THOMAS (1964), Lecturer in Physics
- KLIPPENSTEIN, ERVIN R. (1966), Lecturer in Physics
B.A., Bethel College; M.S., Iowa State University
- KOCH, ERNEST (1967), Lecturer in Science and Mathematics Education
B.A., University of California at Los Angeles
- KRANZ, M. MURRAY (1966), Lecturer in History
B.A., M.A., New York University
- KRAUZE, MARINA (1966), Lecturer in Russian
B.A., M.A., University of California at Los Angeles
- KRUEGER, SALLY (1966), Graduate Assistant in Biology
B.A., Pomona College
- LAMPH, JOHN (1966), Graduate Assistant in Art
B.A., California State College at Fullerton
- LANCASTER, WAYNE (1966), Lecturer in Economics
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- LANGFELDT, JOAN E. (1966), Lecturer in Art
B.A., Michigan State College; M.S., University of Wisconsin
- LARSON, THALIA (1964), Lecturer in Speech
B.A., University of Southern California; M.A., California State College at Long Beach
- LEWIS, DANIEL (1963), Lecturer in Music
B.A., San Diego State College; M.A., Claremont Graduate School
- LIEDLICH, RAYMOND D. (1961), Lecturer in English
B.S., Bowling Green State University; M.A., Los Angeles State College
- LUSTGARTEN, EDGAR (1966), Lecturer in Music
- LYLE, WILLIAM G. (1966), Lecturer in Management
B.A., University of California, Berkeley; M.B.A., University of Southern California
- MADDOX, JAY (1966), Graduate Assistant in Art
B.A., California State College at Fullerton
- MANOOGIAN, LORRAINE (1966), Lecturer in Geography
B.A., M.A., San Fernando Valley State College
- MAJLICH, LORETTA K. (1966), Lecturer in English
B.A., M.A., California State College at Fullerton

- McWILLIAMS, ROBERT G. (1964), Lecturer in Finance
B.S., Boston College; M.B.A., Harvard University
- MEINHARD, JAMES E. (1966), Lecturer in Physics
B.S., Ph.D., University of Wisconsin
- MELTEBARGER, DOROTHY (1966), Assistant in Speech
B.A., California State College at Fullerton
- MILLER, DONALD E. (1967), Lecturer in English
B.A., University of California, Los Angeles
- MILLS, THEODORE D. (1966), Graduate Assistant in Science and Mathematics Education
B.A., California State College at Fullerton
- MOORE, STANLEY W. (1966), Lecturer in Political Science
B.A., Wheaton College
- MORGAN, JOANNE (1966), Lecturer in Psychology
B.A., M.A., Pepperdine College
- MORGAN, JOSEPH C., JR. (1966), Lecturer in Marketing
B.S., M.B.A., University of Southern California
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